The back shoring and reshoring of business services: an explorative analysis on the Offshoring Research Network survey.

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Executive Summary

Questo lavoro si concentra sul tema del Reshoring, che è "la decisione manageriale di trasferire (parzialmente o totalmente) le attività di produzione, servizi o di sourcing in precedenza oggetto di Offshoring" (Fratocchi et al., 2014, pagina 20). Il trasferimento, in termini generali, può avvenire verso diversi paesi ed aree geografiche con obiettivi diversi. Più precisamente, il termine Backshoring verrà utilizzato per affrontare il trasferimento delle attività nel paese di origine dell'impresa (in cui la società è stata fondata originariamente) mentre Reshoring si estenderà anche alle delocalizzazioni delle attività in altri paesi che non sono il paese di origine, e comprende il trasferimento verso qualsiasi regione o paese. Inoltre, la concettualizzazione che verrà utilizzato in questo documento ha lo scopo di evidenziare il collegamento tra le iniziative Offshoring precedenti ed i progetti di Reshoring che le stesse aziende hanno implementato successivamente. L’attenzione di questo lavoro di tesina riguardo il Reshoring si focalizza sulle “post-performance implications” dell’Offshoring, ovvero l’analisi a posteriori delle performance dei progetti di delocalizzazione e della loro conseguente revisione tramite progetti di Reshoring. Le riflessioni sul Backshoring (maggiormente legato alla reindustrializzazione dei paese avanzati piuttosto che alle performance dei progetti di Offshoring) che ne conseguono derivano degli stretti legami tra i due fenomeni, essendo il Backshoring una tipologia specifica di Reshoring. Il Backreshoring comprende infatti quei casi particolari in cui, l’azienda non solo decide di ricollocare l’attività, ma decide anche di riportarla nel proprio paese d’origine.

Si noti, inoltre, che la maggior parte degli studi svolti sinora si concentrano sul Reshoring di attività manifatturiere (Fratocchi et al., 2007) mentre questo lavoro, così come il progetto Offshoring Research Network illustrato in seguito ed utilizzato per le analisi empiriche, studia il Reshoring nel mondo dei “business services”, ovvero dei servizi di supporto al business delle imprese (funzioni di call center ed assistenza clienti, funzioni di contabilità, R&S, servizi interni di IT, ecc). Ne consegue che le riflessioni contenute in questo lavoro, così come il contenuto del database ORN, sono specifici di queste tipologie di attività e pertanto possono differire, in misura variabile,
rispetto a quanto sinora evidenziato dalla letteratura e dalla ricerca per il settore manifatturiero.

Attualmente due diverse scuole di pensiero sono nate per spiegare il fenomeno del Reshoring in tutto il mondo.


Kinkel (2014) ha evidenziato che il 20% delle decisioni di Reshoring totali delle imprese tedesche da lui analizzati sono reazioni di medio o lungo termine ai cambiamenti nelle condizioni in loco, mentre il restante 80% sono correzioni di errori gestionali. Quali condizioni sono cambiate così profondamente da spingere le aziende a trasferire le attività? I fattori più importanti emersi dalla revisione della letteratura sono:

È diminuito il divario del costo del lavoro tra paesi emergenti e sviluppati, anche a causa di una maggiore domanda di manodopera generata dall’Offshoring stesso. Sempre riguardo la manodopera nel paese di destinazione, la ricerca di personale qualificato, tuttavia, non è soggetta di particolare attenzione da parte delle imprese. La bassa considerazione di questi fattori può far incorrere in risultati insoddisfacenti nell’Offshoring che possono culminare in Reshoring a causa di scelte sbagliate nelle decisioni di delocalizzazione. Questo perché da un lato la revisione della letteratura ha sottolineato che la carenza di personale qualificato sta causando molti costi nascosti
nonché costi visibili imprevisti (come la formazione prolungata ed eccessiva dei lavoratori, elevata rotazione, diminuzione della qualità del servizio, ecc.), mentre l’analisi delle corrispondenze della banca dati del sondaggio ORN ha mostrato invece che l’importanza di questi elementi è altamente sottovalutato. Tale incongruenza porta a suggerire a professionisti e manager di analizzare meglio la disponibilità in loco di personale qualificato e di considerare i costi relativi al momento di valutare l’investimento di Offshoring relativamente ad un paese specifico.

I rapporti di cambio tra le valute sono cambiati. Per esempio il rafforzamento dello Yuan cinese rispetto al dollaro americano ha ridotto i vantaggi della delocalizzazione riguardo alla riduzione dei costi (da Giugno 2003 a Giugno 2013, lo YUAN cinese si è rivalutato del 35% rispetto al dollaro americano; “Reshoring Manufacturing”, 2013). Le politiche governative, inoltre, sono cambiate. Da un lato le politiche di maggior tutela dei lavoratori nei mercati emergenti ha reso più complesso e costoso gestire il business in questi paesi mentre dall’altro le politiche di reindustrializzazione dei paesi emergenti (si pensi, ad esempio, alla campagna elettorale di Obama nel 2012 ha cercato di incentivare il Backshoring e di ridurre l’Offshoring.

La dimensione dei mercati locali si è modificata, spingendo le imprese a modificare le proprie strategie, talvolta tramite Reshoring verso paesi nei quali tentare di penetrare il mercato o spingendole a tornare in patria (Backshoring) a causa della perdita di attrattività del mercato nel interno del paese host.

Si invita, tuttavia, a notare che, anche se questi fallimenti sono comunemente riconosciuti, la tendenza Offshoring è ancora in aumento (Hutzschenreuter et al. 2011; Stringfellow et al., 2007; Miroudot et al, 2009; Contractor et al, 2010).

La distanza culturale ed i suoi effetti sia sulla qualità del servizio che nella genesi di costi invisibili sono spesso ignorati o non adeguatamente considerati durante il processo di valutazione riguardo le iniziative di Offshoring. Più grande è la distanza culturale, più è probabile che la società dovrà effettuare Reshoring dell’attività. Tale conclusione deriva dagli effetti negativi della distanza culturale (si veda Stringellow et al., 2007 e Larsen et al., 2011) e dalla incongruente disattenzione delle imprese riguardo a questo fattore sottolineata dagli autori e confermata dallo studio empirico; particolarmente nei settori caratterizzati da elevata interazione con i clienti (come nei casi di servizi di assistenza ai clienti o ai dipendenti interni). Tali aspetti culturali hanno un significato molto basso per gli intervistati dalla survey ORN, come mostrato nella rappresentazione dell’analisi delle corrispondenze. Insieme ad altri fattori sottovalutati quali la stabilità politica e la maturità del paese (che riguarda l’aspetto legislativo, infrastrutturale, ecc.), questi fattori legati al paese ospitante possono essere una possibile causa di Reshoring per i motivi di cui sopra. Il consiglio ai professionisti derivanti da tale analisi è che la valutazione del possibile impatto degli aspetti culturali e politici dovrebbe essere analizzato con maggiore attenzione dal momento dato il loro impatto sulle performance dell’Offshoring (i fattori più importanti da considerare sono stati evidenziati da Hofstede). La probabilità di successo di una iniziativa Offshoring, inoltre, cambia a seconda del paese di destinazione. Il Reshoring “correttivo” di precedenti errori strategici è più probabile quando l’Offshoring iniziale viene implementato in alcune regioni specifiche.

Dal momento che "Una società non può perseguire Reshoring a meno di aver precedentemente implementato un progetto di Offshoring" (Gray et al., 2013, pag. 3). In quanto condizione imprescindibile per il Reshoring è obbligatorio capire l’Offshoring prima di analizzare la sua "decisione inversa" (Gray et al., 2013, pag. 3). Seguendo questo punto di vista, l’analisi della banca dati ORN è stata implementata ad un’analisi approfondita delle circostanze in cui l’Offshoring può concorrere a causare Reshoring al fine di fornire consigli significativi per professionisti e nuovi aspetti per ricerche future.
Una delle particolarità del database ORN è che i suoi dati siano di struttura molto diversa, da valori binari attraverso scale Likert (da 1 a 5 in questo caso) fino a dati quantitativi ed elementi qualitativi. In particolare, la decisione del paese specifico nel quale ricollocare la funzione, dei Driver che hanno spinto l’impresa verso la delocalizzazione ed i risultati del processo di Offshoring sono raccolti attraverso scale Likert. A causa della particolare struttura dei dati, i dati derivati da scale Likert sono stati analizzati con tecniche non convenzionali, permettendo di evidenziare nuovi aspetti del Reshoring. L’analisi delle corrispondenze ha sottolineato che un approccio convenzionale non è la soluzione più efficace durante la manipolazione di variabili Likert derivati. L’analisi Correspondence Analysis (o analisi delle corrispondenze) ha mostrato come l’effetto della percezione personale e soggettiva dell’argomento e del questionario può influenzare i dati del sondaggio ORN, suggerendo un approccio non convenzionale per tali dati al fine di avere dati più affidabili. Marradi e Macrì (2012) hanno dichiarato che questi risultati (emersi dall’analisi delle corrispondenze) sono più affidabili in quanto tengono conto del diverso contesto per quanto riguarda ogni singolo fattore e permettono una migliore rappresentazione dei giudizi degli intervistati. Questo perché ogni fattore (a seconda anche della domanda specifica nel sondaggio) può essere percepito in modo leggermente diverso tra i vari partecipanti e, nello stesso modo, ogni giudizio (voto da 1 a 5 in questo caso) può essere percepito ed attribuito in modo leggermente diverso a seconda del soggetto con un conseguente utilizzo non equivalente e non omogeneo dei voti dagli intervistati.

L’analisi delle corrispondenze mostra una struttura non equidistante tra i gradi della scala Likert (ad es. la distanza tra 1 e 2 è molto più grande di quello da 2 a 3, il che significa che l'intensità atteggiamento e il livello di accordo stanno cambiando in una scala più ampia che va dal 1 al 2 rispetto alla variazione del grado da 2 a 3). Ciò significa che è invece necessario tener conto del fatto che l'intensità atteggiamento e il livello di accordo non cambiano linearmente. L’analisi ha fornito un nuovo punto di vista da cui analizzare i dati, cambiando inoltre l’attenzione rispetto a fattori specifici. Per questo motivo, è stato dimostrato come determinati fattori siano sottovalutati e non adeguatamente presi in considerazione da parte delle imprese. In particolare, gli
aspetti culturali (evidenziati come significativi dalla revisione della letteratura, Stringellow et al., 2007 e Larsen et al., 2011) non sono analizzati appropriatamente da parte delle imprese con conseguente possibile causa di Reshoring nel breve termine (come effetto correttivo, quindi negativo). Il consiglio per i manager è quindi quello di analizzare meglio le circostanze nel paese ospitante e studiare le differenze con la cultura del paese d’origine dell’impresa.

La co-localizzazione di funzioni diverse è stato altresì messa in evidenza per la sua scarsa importanza nella decisione del paese “host” e come Driver nel processo di delocalizzazione (il suo voto medio è cambiato da 3,01/5 a 2,53/5 nell’analisi di ponderazione secondo le corrispondenze). Il two-way clustering ha dimostrato che ci sono due strategie principali che guidano il modo in cui le imprese stanno scegliendo il luogo in cui delocalizzare:

1. Le imprese orientate ai costi si stanno concentrando sui miglioramenti di riduzione dei costi e miglioramenti dell’efficienza;
2. Società orientate alle sinergie stanno cercando di co-localizzare le funzioni (servizi, impianti, processi, ecc.).

La frammentazione della catena del valore, è stata evidenziata dagli studiosi come una causa frequente di costi imprevisti dovuti alla delocalizzazione. Per le società il consiglio è che deve essere indirizzata una maggiore attenzione e considerazione a questi elementi di co-localizzazione, in particolare R&S e produzione, IT e le funzioni che si affidano ai suoi servizi sono i casi più importanti (Berry, 2014; Dossani e Kenney, 2007; Ernst 2006; Lewin e Couto, 2007; Lewin e Peeters, 2006; Manning et al, 2008; Jensen e Pederson, 2011). Una conoscenza più nitida e un’analisi più approfondita su tali fattori migliorerà la capacità delle imprese di valutare un processo di Offshoring riducendo la probabilità di un futuro progetto di Reshoring correttivo. Il consiglio diretto ai manager è, nel caso in cui la loro azienda stia implementando un Offshoring orientato ai costi (che, secondo i dati ORN sono il 86% dei casi), è di valutare in modo più approfondito le conseguenze della frammentazione della catena del valore.
L’analisi ha anche confermato l’intuizione, ampiamente condivisa dagli studiosi, che la riduzione del costo del lavoro è l’elemento decisionale principale ed indirizza in modo forte la decisione di delocalizzazione ed il paese di destinazione. Il costo del lavoro determina, infatti, le strategie dominanti in materia di progetti di Offshoring (l’86%). Per questo motivo l’efficienza è stata poi oggetto di analisi approfondite dei dati. Tali analisi hanno evidenziato diversi aspetti. Le piccole imprese stanno ottenendo miglioramenti di efficienza più elevati rispetto alle multinazionali. Dal punto di vista pura efficienza, FBI (servizi finanziari, funzioni bancarie delle imprese, assicurazioni), AERDEF (Aerospazio e Difesa) e Trans (Trasporti e Logistica) sono i settori in cui la riduzione dei costi e miglioramento dell’efficienza ha i risultati più negativi. Per questo motivo, il Reshoring come una revisione a breve termine sul progetto di Offshoring (a causa di risultati insufficienti in termini di riduzione del costo del lavoro e di miglioramento dell’efficienza) è più probabile che accada in questi settori. In Cina le funzioni stanno sperimentando i benefici più elevati, per questo motivo le loro valutazioni relativamente ai progetti di Offshoring è più probabile che sia positiva da parte delle imprese. A causa di ciò, le aziende che hanno delocalizzato in Cina hanno meno probabilità di eseguire Reshoring con lo scopo di correggere la strategia.

L’analisi Anova della varianza della variabile di efficienza ha mostrato che il paese/regione ospitante è significativa per i miglioramenti dell’efficienza ma l’interazione del paese di destinazione con il settore e la dimensione dell’impresa non sono invece significativi nel modello Anova. Ciò significa che i risultati riportati nella non differiscono obbligatoriamente tra le multinazionali e le piccole e medie imprese. All’interno dello stesso settore la dimensione dell’impresa influenza i risultati. I due risultati più significativi sono stati i seguenti:

- Nei cluster FBI (servizi finanziari, funzioni bancarie, assicurazioni), le grandi aziende hanno conseguito peggioramenti dell’efficienza, mentre le piccole imprese delta positivi. Di conseguenza per le piccole imprese è meno probabile che Reshoring correttivo venga implementato;
- Nei settori Aerospace & Defence e nel Trasporto e Logistica e le aziende hanno avuto risultati positivi in cui l’efficienza è aumentata in modo significativo.
Tuttavia tale risultato medio nel settore è stato guidato da piccole e medie imprese, perché le grandi imprese non hanno una performance positiva;

Due tipi principali di progetti Offshoring sono stati trovati dal punto di vista della distanza culturale: progetti in cui le imprese che hanno delocalizzato verso paesi con rispettivamente (1) bassa distanza culturale e (2) ad alta distanza culturale rispetto al loro paese di origine. I modelli Anova dei due gruppi hanno mostrato che quando la distanza culturale è alta (2) la modalità di ingresso nel paese (o strategia di Offshoring) è altamente significativa. Si può dedurre che l’importanza della scelta della modalità di inserimento (Captive, joint venture o soluzioni di outsourcing) è di fondamentale importanza tanto più la distanza culturale è alta perché grande è l’impatto sul risultato e sull’efficacia dell’iniziativa (considerando i miglioramenti di efficienza ottenuti nel campione ORN), modificando la probabilità di Reshoring futuri. I risultati dell’analisi delle prestazioni in termini di efficienza sono stati interpretati assumendo che migliori risultati in tali fattori hanno concorso a ridurre la probabilità dell’implementazione di progetti di Reshoring per correggere gli errori precedenti, al contrario di altri casi ove il Reshoring viene utilizzato per modificare la strategia o per adattarsi alle nuove circostanze (elementi sottolineati dalla seconda scuola di pensiero illustrata poc’anzi).

1 Introduction: Back/Reshoring

On December 6th 2012, Apple Inc. CEO Tim Cook revealed that the production of one MacBook model will be repatriated at 100% so that it will be manufactured, again, exclusively in the U.S. from 2013 on. Apple Inc. is one of the many manufacturing companies that took the decision to return the production to their home countries. Other significant and similar examples cases of factories and offices repatriation comprehend MNEs such as GE, Caterpillar Inc., Royal Philips, Dell Inc., Ford Motor Company and Walmart Stores Inc. in the U.S. (Stringfellow et al., 2007; Ellram, 2013; Fratocchi et al., 2014; Berry, 2014; Bender, 2012 ), Renault S.A. and Robert Bosch GmbH in Europe (Kinkel, 2014). This tendency, that later has been referred as a proper phenomenon, has not involved only large MNEs but also numerous small and medium size companies in different industries, from manufacturing to services. Recently, such topic has also been of academic interest as demonstrated by Fratocchi et al. (2014). Despite this increased attention, reliable and quantitative data and studies concerning the repatriation of the factories and offices is poor and inadequate (Fratocchi et al. 2014).

The phenomenon started back in 1960’ and, in the late 1990s, the offshoring phenomenon spread from the manufacturing to the service sector. By the 2000s, offshoring services extended to high value professional and business services, such as IT, banking that 3.4 million white-collar jobs, including 830,000 in services.

This work will focus on the topic of Reshoring, that is “managerial decisions to relocate (partially or totally) production or other activities earlier off-shored” (Fratocchi et al., 2014, page 20). The relocation, in fact, might be toward different regions with different goals. More precisely, back shoring will be used to address the relocation of the activities in the home country (country of origin of the enterprise) in which the company was originally based while reshoring will extend also to relocations of the activities in other countries that are not the home country. Reshoring comprehends relocation towards any region or country. In case the destination is a country closer to “home” compared to the initial offshoring location, the relocation process is named nearshoring. Near-shoring is, then, a specific type of reshoring in which the new location is sensibly closer to the home country compared to the initial offshoring location. The work firstly analyses the current literature, trying to summarize the different opinions and concepts raised by scholars on the subject of Reshoring and its relations with the Offshoring performances. The main aspect are formalized in propositions and explored in the empirical studies. After the literature review, the empirical study of the Offshoring Research Network performed several exploratory
analysis in order to highlight the most significant aspects relating the performance of the Offshoring processes with the Reshoring. In particular, the decision process previous to the delocalization and the performance outcomes will be studied and compared to the theoretical concepts.

Companies have delocalized business services and, later, repatriated or simply relocated these offshore functions due to various reasons that have been deepened in this work. Two reasons have raised in the years explaining the Back/Reshoring process. The first asserts that it is a short-term correction to the previous offshoring process. This might be necessary due to mistakes during the decision process over the offshoring project. The second explanation provided by the scholars stated that, in many cases, the necessity to relocate (that is, to implement Back/Reshoring projects) comes from the changes of the social, political or economical situations, both locally and globally, that push the firms to change their initial strategies. Over time, in fact, political conditions, laws, economical trends and firms’ internal factors may change dramatically, forcing companies to adapt to new conditions through Back/Reshoring. Throughout the back/reshoring companies are reversing previous offshoring decisions and that makes reshoring a very important trend, besides the relative managerial decisions are quite critical. In simple words, the back/reshoring phenomenon consists in relocating one or more business units to different geographical locations. This implies that, Back/Reshoring is not a once and for all decision but rather a possible phase of the firm's long-term internationalization strategy of production activities (Fraticchi et al., 2014). Due to its magnitude, the little knowledge collected so far and such important managerial implications, the Back/Reshoring captured scholars attention due to the need for more knowledge in this important subject.
2 Literature review

2.1 Offshoring, the starting point

Manning et al. (2009) defined offshoring as the process throughout which firms are relocating (partially or totally) the plants out of the country of origin (home country). According to the authors, offshoring refers to the process of relocating any business activity, process or function abroad, particularly in lower cost emerging economies such as India and China. On the subject, Fratocchi et al. (2014) observed that it is important to consider that offshoring comprehends cross-border relocation to (often) geographically remote countries of activities and processes, that were earlier performed in company's home country, with the purpose of serving global markets (Doh et al., 2009; Manning & Massini, 2008; Lewin et al., 2009; Bunyaratavej et al., 2011; Jensen et al., 2013; Schmeisser, 2013).

The main focus in this work will be on the back/reshoring affecting offshoring projects of the service BU and support functions such as, according to Gray et al. (2013), call contact centers (which include help desks, clients technical support offices, information services and CRM, customer relationship management), shared services centers (backoffice functions such as data processing, transaction processing, and claims and payroll processing) and IT services centers (software development, software design and applications testing). Offshoring of services has be defined as the relocation towards foreign countries of services (both customer services and internal services within the firm) that were previously performed at “home” (Fratocchi et al., 2014). White collars’ relocation was then included in the previous Manning et al. (2009) definition of offshoring which mainly referred to manufacturing activities, the conceptualization is comparable with the one proposed by Schmeisser (2013) who studied the “contemporary off-shoring”, that, according to the author, now also includes non-manufacturing activities and processes (see also Jensen et al., 2013). In Ferdows’s words, offshoring has been recently one of the most common strategies implemented by enterprises to generate and protect a competitive advantage against the competitors (1997). Offshoring strategies were, in certain occasions, adopted jointly with outsourcing implementations, so that the distinctions between the two strategies and terms was often confused, even if the main phenomenon and strategies were widely distinct (Tate et al., 2009; Jahns et al., 2006; Olsen, 2006; Schmeisser, 2013; Hutzschenreuter et al., 2011). The offshoring can be performed with many strategies and implementations, that can be summarized in two main currents and macro models:
a) Captive Offshoring (offshore insourcing) which is also defined as “offshore branches/affiliates” or “offshore captives” (Schniederjans et al., 2005) and consists in starting proprietary activities in a foreign country starting the business with a subsidiary. In this case firms relocate services to other countries but continue to perform these services themselves;

b) Offshore Outsourcing that is outsourcing by means of foreign suppliers (Duening and Click, 2005). In this case the firms might simply rely on hired third-party to perform the offshored services.

It must be said that the back/reshoring subject of this study involves both these types of offshoring regardless of the strategy. Aksin and Masini have noticed, for instance, that Citigroup Inc. has founded Citigroup Business Services Inc., a shared services internal provider active in three regions around the globe with as many as three offices; these offices are responsible for various internal services and services such as financial reporting, payroll and benefits administration and accounts payable of the group (2007).

The support functions location decision process was subject of studies, in particular Hutzschenreuter et al. (2011) noted, in their analysis, that the patterns in white-collars relocation were comparable to those of blue-collars relocation in the recent past. In addition, Fratocchi et al. (2014) pointed out the lack of a single theory able to explain decision processes, objectives and patterns of enterprises execution of activities offshoring. Therefore, a co-evolutionary concepts raised and were adopted by scholars and international business literature in general (Fratocchi et al., 2014). The co-evolutionary perspective (concerning firm’s offshoring strategies) assumes that each factor involved in the offshoring decision process is part of a larger system in which every infinitesimal variable influences each other’s evolution and, as consequence, has a joint effect on the final decision on if, where and how the relocation should be performed (Manning et al., 2010). Coherently, Schmeisser (2012) developed a framework asserting that companies’ decision in offshoring involves three main factors each of which has different effects at different levels:

- the strategic aim of the firms involved in the decision (e.g. achieving higher efficiency or, still according to Dunning’s definition, resource- or market-seeking goals);

- environmental variables resulting from enterprise’s ecosystem, which can derive from inertial towards relocations and/or involve specific driver in the offshoring decision formulations (such as different strategies). For instance home or host country laws and government policies (and their differences).
Hutzschenreuter et al. suggested those related to intellectual property (IP) rights or industry acceptance as most typical cases (2011);

c) organization-specific factors, for instance company’s accumulated international knowledge, relocation process experience, the co-location of supply-chain partners or with production plants already offshored.

Similarly, Jensen and Pedersen (2011) asserted that this offshoring wave is the result of many different co-evolutionary driving factors. The main variables pointed out by the authors are the liberalization of trade, economic reforms and policies by emerging markets’ governments, raised intellectual property rights protection throughout regulation, mature supplier base presence in such emerging regions and the availability of information and communication technologies and infrastructures. Concerning the first point (a, the strategic mission of the offshoring initiative), is often defined by scholars as an efficiency-seeking strategy driven at international level (Fratocchi et al., 2014).

More recently, Jensen et al. (2013) conceptualized offshoring as “an organizational reconfiguration consisting in three stages: disintegration, relocation and integration”. Jensen et al. (2013) conceptualization was inspired by Kedia and Mukhrjee (2009) whom have described reasons and aims of the offshoring companies with the DLE theory (Disintegration, Location and Externalization). To explain how DLE and other theories regarding disaggregation and disintegration might explain the changes in the offshoring processes Contractor et al. (2010) used an example. In pharmaceutical R&D, key company secrets are kept in-house while the clinical trial portion of research (comprising around 40 per cent of overall R&D budgets) is increasingly being offshored and outsourced (Azoulay, 2004; Cockburn, 2004). This strategy rethinking first requires companies to closely examine their research procedures to see how the whole process can be divided and modularized into separable bits. Second, the firm identifies those portions of R&D that can be standardized, routinized, and codified. Third comes the decision, for a particular R&D operation, as to which R&D activity may be safely externalized or offshored and allocated over the six cells in figure 1. In this respect this study will consider as separable bits the single units and offices relocated, every single relocation will be an observation of the phenomenon.

The disaggregation and routinization, in R&D, production, marketing and other support activities, has been aided by the increased codification of corporate knowledge (Balconi et al., 2007). Procedures that used to be just in the minds of engineers or managers are now put down in written routines, software, or expert systems. Once codified, the manuals or software can be read, absorbed, and implemented even
outside the firm by contracted outsource providers. Ceteris paribus, codification of knowledge increases the likelihood of outsourcing and offshoring. However, it might also increase the likelihood of technology leakage, but if only a discrete bit of the entire process or routine is shared with a contract provider or alliance partner, then the latter is unable to put the whole system together to become a competitor. The fear of technology and data leakage is often a restraint to R&D and other highly qualified services abroad relocation (Contractor et al, 2010). Are these obstacles to offshoring functioning as incentives to back/reshoring for those who have implemented it? This paper will try to highlight all the factors which are now pushing the companies to repatriate (backshoring) or, generally, to relocate (reshoring).

Thus, thanks to disaggregation and disintegration, selected bits of a larger R&D or production process may not extremely rise the mora hazard exposure of the firm. Dossani and Kenney (2007, p. 779) recognize this notable attitudinal change and conclude that “offshoring of services have evolved from an exotic and risky strategy to a routine business decision”. In short, the new strategic thinking accepts the notion that even a large firm can no longer always rely on its own internal resources, even for critical or core functions. Large firms are now content to be part of global networks of expertise. Offshoring and outsourcing activities have shifted from being seen as an operational tool with a focus on cost savings to becoming activities with strategic importance, closer to the heart of the firm, this fact has given rise to a new wave of offshoring processes (Mouhoud, 2007). It must be said though that many firms continue to perform R&D in-house in the headquarters country. As mentioned above, that is due to fear of technology and data leakage although many have analysed and sliced their R&D operations into discrete pieces and relocated several of them (Contractor et al, 2010).

The most challenging strategical and operative decision is, according to Contractor et al (2010) to find the optimal degree of disaggregation and dispersion to not compromise firm’s performance while seeking efficiency and resources implementing offshoring.

Due to this tight balance between “pains” and “gains” offshoring initiatives are not always satisfying and/or long lasting. Certain elements such as unexpected costs, hidden costs or quality issues are recently pushing firms to relocate their abroad offices back to the home country (that in this work will be addressed as backshoring) or, simply, in a different country (that in this work will be addressed as reshoring).

The most diffused term used to indicate this relocation decision is reshoring, in this work the term will be included in a more complex term which is “back/reshoring” that
tries to highlight the different nature of the backshoring. Backshoring is, in this conceptualization, incorporated in the reshoring term in the sense that backshoring (relocation of the activities into the home country) is included into the reshoring process (relocation of the activities in a different country). The term back/reshoring itself tries to highlight that the sub-phenomenon of the backshoring might deserve to be differentiated when needed because it corresponds to the complete and utter abandonment of the offshoring strategy, at least from an etymological definition. As defined earlier, our first goal is to explore the back/reshoring phenomenon in order to clarify “what it is and what it is not” (Gray et al., 2013). In order to study such a complex phenomenon we have to consider where it comes from, considering “how does the governance structure and expectations for offshoring change over time” (Tate et al., 2009). In other words, we need to explore whether it is a new theoretical concept, that is, why and regarding to which facets it is by nature different relative to other ones already proposed in the international business and international operation management literature. The target of this work is to point out and analyse which are the specific issues and shortcomings pushing the companies to reshore.

*Figure 1: Six allocation choices for each value chain activity (according to Strigfellow et al., 2007)*
Concluding the discussion, such an introduction to offshoring was necessary since, in the words of Gray et al. (2013, pag. 3), “A firm cannot pursue Reshoring unless it had previously pursued Offshoring”. As the essential ingredient to back/reshoring it is mandatory to understand Offshoring before analysing his “reverse decision” (Gray et al., 2013, pag. 3).

2.2 Back/reshoring: reverse of offshoring?

Throughout the back/reshoring companies are reversing previous offshoring decisions and that makes reshoring a very important trend, besides the relative managerial decisions are quite critical. In simple words, the back/reshoring phenomenon consists in relocating one or more business units to different geographical locations. This implies that, back/reshoring is not a once and for all decision but rather a possible phase of the firm’s long-term internationalization strategy of production activities (Fratocchi et al., 2014). The reshoring phenomenon (general total or partial relocation of an activity currently executed abroad) can be then subdivided into different specific patterns. The relocation, in fact, might be toward different regions with different goals. In case the selected new location is the home country of the company’s original HQ then the phenomenon is called backshoring (other terms are adopted, Simon (2009) named the movement of activities back to the home country “home-shoring”). In order to better conceptualize the definition, Fratocchi et al. (2014) provides another definition for backshoring “a voluntary corporate strategy regarding the home-country’s partial or total re-location of (in-sourced or out-sourced) production to serve the local, regional or global demands”. Based on this conceptualization, backshoring is one of the strategic options available to firms in terms of international relocation of (in-sourced or out-sourced) activities (Fratocchi et al., 2013). The second particular type of relocation we are interested for this work is the case in which the destination is a country closer to “home”, in this case the name of the relocation process is nearshoring. In general, while Eastern Europe and North Africa remain attractive for European companies (Simon, 2009), Mexico and Latin American countries continue to represent a popular nearshoring location for North American firms. Articles within the domain of reshoring detail the movement of activities back to the home country (occasionally addressed also as “home-shoring” as I will discuss in this section), as well as the relocation of activities closer to the home country (nearshoring).

It may then be concluded that the wider phenomenon of the relocation, called back/reshoring, comprehend the two sub-phenomenon which are the relocation in the home country (backshoring) and the relocation in a third country closer to the former country (nearshoring). Accordingly, for the purpose of this paper the term back/reshoring will be adopted and used to assess the wider phenomenon of the activities relocation phenomenon, the specific terms referring to the two type of sub-
The phenomenon explained above (backshoring and nearshoring) will be used to address the specific sub-phenomenon. The adopted terms were suggested by Fratocchi et al. (2013) and they seem to better represent what this work is aiming to explore. Having pointed the terminology that will be used on this paper, we should analyse how and why the available literature names the phenomenon.

*Figure 2: Six allocation choices for each value chain activity (according to Strigfellow et al., 2007) with the addition of backshoring and nearshoring paths.*
2.3 Boundaries of the phenomenon, previously developed theoretical concepts

According to what has been said in the introduction Apple is only one of numerous US companies that have decided to return production, support functions or generic back-offices to the home country. Other prominent, analogous cases include industrial giants such as General Electric, Caterpillar and Ford, but also a plethora of small- and medium-sized enterprises operating in a differentiated set of industries and other geographical regions such as EU. Such events are generally labelled by terms like “re-shoring”, “back-shoring”, “on-shoring” and “in-shoring”. They have become increasingly common in the economic press (see, among others, The Economist, 2013), in white papers by consulting firms and academic literature (see Kinkel, 2014; Sirkin et al., 2012; Tate et al., 2014). Even if scholars use different labels to define the phenomenon they investigate (generally, back-shoring or re-shoring), their theoretical conceptualizations seem to converge. More recently, the topic has also attracted academic attention (Holz, 2009; Kinkel and Maloca, 2009; Leibl et al., 2011; Kinkel, 2012; Kinkel and Zanker, 2013; Dachs and Kinkel, 2013; Fratocchi et al., 2013 and 2014) which explicitly refers to back/reshoring. On April 2013 the *Journal of Supply Chain Management* dedicated a specific forum to back/reshoring (Ellram, 2013; Gray et al., 2013; Ellram et al., 2013). Finally, United Nations Conference on Trade and Development (UNCTAD) recognized the relevance of the phenomenon and the implications for policy-makers (UNCTAD, 2013). The main objective of this paragraph is, in fact, to analyse previous terminology, definition and concepts used in the literature to have a complete picture not only on the subject but also on its interpretation given by scholars and firms. Notwithstanding this increasing attention, reliable and quantitative evidence on the extent of the back/reshoring phenomenon is scanty and often of anecdotal nature. Moreover, its definition and characterization is still questioned to the nineties; however, they merely pinpointed instances in which offshoring and outsourcing strategies had not necessarily led to higher profits and/or to competitive advantages (see, among others, Müller, 1996; Borgmann et al., 2000; Schulte, 2002; Aron & Singh, 2005; Leibl et al., 2009). Analogous descriptions can be found in some McKinsey white papers (see, among others, Agrawal et al., 2003; Ritter & Sternfels, 2004; Coxon et al., 2008), which critically questioned the benefits of offshoring and outsourcing strategies in the light of wide differences between initially estimated savings and those actually achieved.

The point of view emerging from the authors can be summarized as that the back/reshoring derives from the non-positive outcomes of previous offshoring initiatives. More recently few specific “hidden costs” of such a strategic decision have been identified, these are unexpected costs resulting from the relocation of business
tasks and activities outside the home country (see, among others, Larsen et al., 2011; Stringfellow et al., 2007 and Fratocchi et al., 2013). Authors verified that such costs are particularly risky when offshoring is implemented because of industry acceptance or without the necessary scenario analysis. Evidences of the shortcomings of offshoring strategies are often coupled with decisions to totally or partially repatriate/relocate, but it must be said that not all the authors are giving this explanation, as it will be discussed further in the paragraph. Both phenomena have been implemented for a long time, as clearly put in evidence by Mouhoud (2007) who identified four distinct “waves” of relocations since the eighties. In order to investigate such a phenomenon, various scholars and practitioners have proposed differing terms to indicate the phenomenon in question. “Relocation” is defined as a geographical decision for a company (Holz, 2009; Kinkel, 2014). With this respect, three issue must be considered, creating great heterogeneity within the reshoring and backshoring strategies:

a) an institutional level (if the entire company returns to the homeland) or a functional level (a single function returns to the homeland) (Hardock, 2000);

b) direct return (if the activity is reincorporated in the firm’s homeland facility) or indirect return (if the activity is outsourced to independent homeland companies) (Holz, 2009);

c) complete closure (if the foreign location is closed) or partial closure -resizing- (Schulte, 2002).

The use of the term “back-shoring” is more recent and initially pursued by practitioners to refer to the return relocation cases observed in the IT industries (Fisher, 2006 and Gales, 2008). However, the first academic definition of the phenomenon is proposed by Holz, according to whom backshoring is “the geographic relocation of a functional, value creating operation from a location abroad back to the domestic country of the company” (2009). In their founding contribution, Kinkel and Maloca, define backshoring as the “re-concentration of parts of production from own foreign locations as well as from foreign suppliers to the domestic production site of the company” (2009).

The previous definitions are consistent with the definition adopted in this work that was suggested by Fratocchi et al., (2013) that is “back/reshoring... is the voluntary corporate strategy to partially or totally relocate the production (in-sourced or out-sourced) to its home country...”. Ellram’s definition was coherent with Kedia and Mukhrjee (2009) and their Disintegration-Location-Externalization conceptualization of the phenomenon. Gray et al. (2013), (insourcing vs outsourcing) implemented before and after the re-shoring implementation. More recently, Kinkel conceptualizes this strategy as the re-concentration of the firm’s “production capacities, trying to exploit
the benefits of higher capacity utilisation and a superior relation of variable costs to fix at their existing locations” (2012). Moreover, Kinkel and Zanker (2013), differentiate between on-shore (when the relocation takes place within the firm’s home country) and back-shore (when the activity is moved from a foreign location). Finally, Dachs and Kinkel (2013) distinguish between backshoring from high-income countries and low income ones. Based on such a distinction, they put in evidence a differentiation in declared motivations for the move back of production activities. At the same time, Holz (2009) defines back sourcing as occurring when geographic relocation coincides with the use of an external supplier based in the relocating company’s home country. Such an alternative approach is also defined “indirect back-shoring” (Renz, 2005) and “external back-shoring” (Kinkel and Maloca, 2009). On the contrary, the insourced alternative is defined “direct back-shoring” (Renz, 2005), “internal back-shoring” (Kinkel and Maloca, 2009) or “captive backshoring” (Kinkel and Zanker, 2013). “In-shoring” is another commonly used term in academic and practitioner literature, although the term’s meaning has not been standardised. While Skipper (2006) uses it to denote the opposite of offshoring, Holz point out that in Anglo-American language the term “basically describes an inward investment of foreign companies to the domestic country”. At the same time, the author notes “in German ... [it] is often used wrongly as a synonym for back-shoring” (2009). Moreover, Liao (2010) defines in-shoring as the domestic procurement of goods, either internally or as outsourced to other companies located in the firm’s home country. More recently, Dholakia et al., (2012) propose that the term comprehends the retention of the manufacturing of new products in the home country, in addition to the more intuitive return of production from foreign to domestic sites. In other terms, authors accept the idea that to not implement a further offshoring strategy for a new product is equivalent to repatriate it. Kinkel and Maloca define backshoring as a “re-concentration of parts of production from own foreign locations as well as from foreign suppliers to the domestic production site of the company” (2009). More recently, Ellram defines reshoring “as moving manufacturing back to the country of its parent company” (2013). Therefore, the two terms are often used by scholars as synonyms and are “fundamentally concerned with where manufacturing activities are to be performed, independent of who is performing the manufacturing activities in question” (Gray et al., 2013, pag. 2).
Within the framework in Table 1 suggested by Gray et al. (2013), “In house re-shoring” takes place when the earlier insourced offshored manufacturing activity is later performed in firm’s home country plants. As opposite, “Outsourced re-shoring” happens when earlier outsourced production is transferred from foreign supplier to host country ones. “Re-shoring for outsourcing” option is implemented if manufacturing activities earlier managed in firm’s foreign plants are then outsourced to home country’s suppliers. Finally, the “Re-shoring for Insourcing” option characterizes earlier outsourced production abroad which is insourced in the firms’ home country plants.

Revising the definitions and concepts quoted so far it is possible to summarize the terminology as follows. Consequently, the phenomenon under investigation represents the reverse decision with respect to a previous implemented offshoring or offshored outsourcing strategy. Until now, the literature has been focusing on manufacturing back/reshoring, the above definition of offshoring has been specifically narrowed by authors to include only the relocation of this specific value chain activity (Monczka et al., 2005; Jahns et al., 2006). Bailey and De Propris (2014) stated “in recent years offshoring has cooled and there have been some tentative signs of multinational firms moving parts of their value chains back to their home economies, this phenomenon is reshoring. Furthermore, Bailey and De Propris (2014) are considering the repatriation in the home country the same phenomenon as moving of the production from a very far host country to one localized in the same region of the home country (please note that both the alternatives may be implemented independently of the previous decisions on insourcing or outsourcing of the production activities). This second phenomenon is included into the adopted definition of back/reshoring but is distinguished when appropriate with the term nearshoring. That is because even if the back/reshoring events have many things in common that
are enabling the study of these phenomena as a whole it should not be undervalued the fact that these heterogenic events are analysed separately by other authors and, as a matter of fact, deserve to be threatened separately in some cases.

Quite recently, Ellram (2013) noted that supply chain literature did not pay enough attention to manufacturing location topic. More specifically, it “has been subsumed to the outsourcing decision”; therefore “all of the attention that is being given to reconsidering whether low-cost manufacturing locations support optimal supply chain configurations” (2013). As a consequence the back/reshoring phenomenon did not attract the interest of scholars belonging to such a field of study (Ellram et al., 2013). The result is that, as Hennart et al. noted, “there is a notable table lack of empirical research on back-reshoring strategies” (2002). On the contrary, analyzing the literature on international business some interesting theoretical conceptualizations were proposed, such as those of “de-internationalization” and “foreign/international divestment”. In this respect, it must be noted that the theoretical debate on differences (if any) between the two theoretical concepts under investigation is still not conclusive. For instance, according to Reiljan (2004), the concept of de-internationalization differs, to a certain extent, from that of foreign disinvestment, since analysis of the former can involve numerous and differing dimensions. More specifically, while research on foreign divestment focuses on operational issues that on de-internationalization can additionally address issues of target market or product dimension. On the contrary, Frynas and Mellahi (2011) point out that “de-internationalization” and “foreign/international divestment” are synonymous. While is possible to recognize differences in theoretical perspectives, it is not relevant for this paper aims’ to deepen such a debate. On the contrary, it is extremely useful to highlight the elements that characterize the theoretical conceptualizations under investigation in order to capture the set of variables useful for characterize the back/reshoring phenomenon. The relevance of the de-internationalization phenomenon has been widely recognised in the international business literature since a long time (see, among others, Buckley and Casson, 1998). According to Fratocchi et al. (2014), de-internationalization as a concept was already present in the Welch and Luostarinen (1988) theoretical conceptualization of the corporate internationalization process as an inevitably continuous process. Calof and Beamish (1995) define de-internationalization as a deliberate adaptation of the firm’s degree of international exposure to the international environment. Benito and Welch conceptualize the phenomenon under investigation as “any voluntary or forced actions that reduce a company’s engagement in or exposure to current cross border activities” (1997). For the paper aims’, an useful insight is proposed by Benito and Welch (1997) who differentiate among “partial” and “full” de-internationalisation. More specifically, the
former happens when only some of the subsidiary’s value chain activities are dismissed, the latter when the whole subsidiary is shut down or sold. Therefore, we can characterize the concept of back/reshoring as potentially similar to a partial de-internationalization and it is possible also to distinguish between degree of intensity of such a phenomenon. Although divestment has been widely recognised as a strategic option for a long time (see, *inter alia*, Harrigan and Porter, 1983; Capron et al., 2001; Brauer, 2006; Lee and Madhavan, 2010), divestment related to foreign activities were not deeply investigated.

*Table 2: Theoretical concepts summary*

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<th>Step</th>
<th>Location</th>
<th>Definition</th>
<th>In-sourcing</th>
<th>Out-sourcing</th>
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<tr>
<td>Step 1: Initial international relocation of production activities</td>
<td>Relocation in a foreign country within the firm’s region</td>
<td>Near-shoring</td>
<td>Example: A French company locates its (in-/out-sourced) production activity in Romania - “near-shoring” (Fratocchi et al., 2014)</td>
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<td>A foreign country far away from the firm’s home region</td>
<td>Off-shoring</td>
<td>Example: An Italian company locates its (in-/sourced) production activity in India - “In-Shoring” (Holz, 2009) - “white-collar off-shoring” (Hutzschenreuter et al., 2011) - “Off-shore in-sourcing” (Duening and Click, 2005) - “Off-shore branches” (Schniederjans et al., 2005) - “Off-shore affiliates” (Schniederjans et al., 2005) - “Off-shore out-sourcing” (Duening and Click, 2005)</td>
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<td>Step 2: Relocation of earlier off-shored production activities</td>
<td>The firm’s home country</td>
<td>Back-reshoring</td>
<td>Example: A Canadian company initially off-shores its (in-/out-sourced) production to Poland and then moves it back in the home country</td>
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<td>- “Home-shoring” Simon (2009)</td>
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<td></td>
<td></td>
<td>- “Re-shoring ” (Fratocchi et al., 2014)</td>
<td></td>
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<tr>
<td>A foreign country in the same region of the firm’s home country</td>
<td>Near-reshoring</td>
<td>Example: A US company initially off-shores its (in-/sourced) production to China and then relocates it in Mexico</td>
<td></td>
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<td></td>
<td></td>
<td>- “Near-reshoring, move back in a foreign country in the same firm’s region” (Fratocchi et al., 2014)</td>
<td></td>
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<tr>
<td>A foreign country geographically far away from the host country chosen in Step 1</td>
<td>Further off-shoring</td>
<td>Example: A German company initially off-shores its (in-/sourced) production to Morocco and then relocates it in India</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>- “Further off-reshoring” (Fratocchi et al., 2013)</td>
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</tbody>
</table>
2.3.1 What is known about reshoring?

Still little is known about reshoring’s magnitude, its geographical boundaries, and the underlying motivations of companies reversing previous off-shoring decisions. Moreover, definition and characterization of such a phenomenon are still not definitive. There is a notable lack of empirical research on back-reshoring strategies and Hennart et al. (2002) noted that foreign divestments are generally perceived as negative experiences, which makes executives reluctant to discuss the topic with researchers.

On this point it must be said that the foreign disinvestments theories (such those used by Hennart et al., 2002) were not born to explain back/reshoring or similar phenomena but these theories might be useful to explain few characteristics of such tendency. Foreign investment and disinvestment theories were born earlier in the years to explain the managerial prospective useful in evaluating the investment from a single firm point of view (see, among others, Boddewyn, 1985; Kedia and Mukherjee, 2009).

Another interesting theory is the Real Option Theory developed by many authors (see, among others, McGrath, 1999) which concentrates on the failure of the initiatives produced by firms. The investment failure is one of the two main schools of thoughts born to explain and motivate the reshoring as I will explain further in this work. Although failure in entrepreneurship is pervasive, Real Option Theory often reflects an equally pervasive anti-failure bias and can be used to interpret some facets of the phenomenon studied here. Real options reasoning has been used by McGrath to develop a more balanced perspective on the role of entrepreneurial failure in wealth creation, which emphasizes managing uncertainty by pursuing high-variance outcomes but investing only if conditions are favourable. This can increase profit potential while containing costs. He also offer propositions that suggest how gains from entrepreneurship may be maximized and losses mitigated. This means that the subject of the theories was not the global behaviour of the companies and the tendencies but the evaluation of every single investment/disinvestment decision pattern. That is why it is possible to use these theories to understand the point of view of the firms but it is not wise to use them to explain the reshoring itself. A possible explanation for that lack of theoretical studies is that the volume of offices and manufacturing plants brought back to the home countries has become significant only in the last few years due to the huge contribution of North American firms (Tate et al., 2014). However, it is not a new-born strategy, as shown by Fratocchi et al. (2014) such strategies have been already implemented back in the eighties and nineties. Coherently Jensen and Pedersen (2011) argues that offshoring has taken on additional dimensions with the marked increase in the offshoring of various kinds of administrative and technical
services since the late 1990s (see also Lewin and Couto 2007 and UNCTAD 2004 for an overview).

Concerning the previous offshoring strategies it is important to recall that offshoring of manufacturing, in particular the relocation from high-cost countries to low-cost destinations, has been going on since (at least) the 1960s (e.g., Dunning and Lundan, 2008; Hätönen and Eriksson, 2009; Jensen and Pedersen, 2011). Despite all that, the scholars and managers attention has been focusing only recently on the repatriation activities and trends. The reasons for this increasing attention given to the phenomenon are many, from the growing scale of the back/shoring itself to the persistent perception of the IP loss risk the offshoring companies where being exposed to during a delocalization abroad (particularly in countries like China, where there is a notable lack of laws protecting IP). The problem can be extended also to the capabilities and core competencies of the supply chain as a whole, the lasting damage that outsourcing inflicts not only on a firm’s own capabilities but also on those of other companies that serve its industry, including suppliers of advanced materials, tools, production equipment, and components. These collective are usually called capabilities the industrial commons (Pisano and Shih, 2009). Another reason is that experts are willing to investigate if such a phenomenon has the potential to secure economic growth in the western countries. Business (especially as it relates to geographic choice) is rather cyclical. Researchers need to better understand the cyclical nature of the economy and of business. Tate (2014) has pointed out that throughout time, there has been a lot of attention paid to the make versus buy decision. In some situations, it is better to make, in others to buy. The “shoring” decision is just one more factor added to this age-old problem, where do we want to make and/or buy. There is a lot of potential opportunity for reshoring to the U.S. and there is significant growth in manufacturing especially in the south-eastern portion of the U.S (Tate et al., 2012). Pisano and Shih (2009) also recognized the need for a change in the U.S. government to help the growth and to increase the size of the phenomenon: “The government must alter the way it supports both basic and applied scientific research to promote the kind of broad collaboration of business, academia, and government needed to tackle society’s big problems” (page 1). They pointed out that it is in the interests of Washington and all companies that operate in the U.S. to work together to reinvigorate the country’s industrial commons. According to Pisano and Shih (2009) Washington’s main interest is obvious: to revitalize in particular the all-important high-tech sector.

Why should companies care? Here it comes the challenge for the policy maker, the government needs to stimulate the firms to repatriate and, to do that, the collaboration and discussion with the lobbies and companies is essential. For very
similar reasons the repatriation of manufacturing has also been subject of political discussion in both Europe and US, including a White House forum hosted by President Obama on January 11, 2012. In the US the 2012 election campaign was highly focused on the importance of government initiatives supporting back-shoring, particularly of blue-collars. According to Tate et al. (2013), in fact, this instigated involvement of developed-market economy politicians and prompted cries to bring jobs home. In the United States, this topic was one of the most discussed political issues during the 2012 presidential election. In the same way in Europe, because of the recent economical recession, the topic of reshoring has become politically relevant and noteworthy, as an example recent data shows that 2 percent of all German manufacturing companies have been active in back shoring from 2010 to mid-2012 (Kinkel and Zanker, 2013). The US experience also highlights some of the constraints and limits to reshoring. Manufacturing activities being reshored will require fewer, more highly skilled workers as manufacturing productivity grows. That presents a challenge in terms of raising skill levels in manufacturing. Furthermore, while reshoring may assist in terms of output growth it may not create large numbers of new jobs, as Wells Fargo Economics Group (2012) has highlighted in the US case. Possibilities for manufacturing reshoring in the UK and Europe may be more limited than in the US, as the BCG has concluded (Sirkin et al., 2012).
2.4 Services reshoring

In the late 1990s, the offshoring phenomenon spread from the manufacturing to the service sector. By the 2000s, offshoring services extended to high value professional and business services, such as IT, banking that 3.4 million white-collar American jobs – including 830,000 in services – would shift offshore to countries, such as India, China, Malaysia or the Czech Republic by 2020 (Forrester, 2004; Jensen and Pedersen, 2011). Ramamurti (2004) argues that technological improvements and economic liberalization were major events that triggered a boom in offshoring technical and administrative work. Furthermore, many authors are coherent recognizing the growing importance and size of the phenomenon. While the offshoring of advanced, high-end tasks to foreign locations (and notably to emerging countries like China and India) is still relatively limited, there are several indications that it will grow significantly over the coming decade and become one of the key strategic issues on the agendas of firms with international ambitions (Jensen and Pedersen, 2011; Dossani and Kenney 2007; Lewin et al., 2009). Although this trend has been the subject of debate in academic journals in the past years, many of its features are still not clear (Kenney et al., 2009), and there is a continued demand for empirical evidence and greater theoretical rigor (Hahn and Bunyaratavej, 2009; Bunyaratavej et al., 2011; Fratocchi et al., 2014). Even if the academic debate has gone on for years, Jensen and Pedersen (2011) recognizes a lack of academic knowledge just like Hennart et al. (2002) and Fratocchi et al. (2014) noted for the manufacturing reshoring.

Traditionally, firms implement offshoring for three basic reasons: access to low-cost labor, access to skills and knowledge, and proximity to market (Fratocchi et al., 2014). These factors reflected similarly for the services offshoring and for internal services (Stringfellow et al., 2007; see also Contractor et al., 2010). The main target of this work is to focus on the internal services (such as financial reporting, payroll and benefits administration and accounts payable), which had less attention than manufacturing since it is also more recent. First, the same argument for access to the low production cost in manufacturing remains true for services and white-collars in general. For example, a financial analyst who earns U.S. $ 35 per hour in the U.S. might receive U.S.$ 10 per hour in India (Tate et al., 2010). Second, offshoring also provides access to knowledge and skills. For example, representatives in AOL call centers in Bangalore are all university graduates. Many of them hold advanced degrees (Stringfellow et al., 2007). This stands in stark contrast with the education level in the U.S. call center. The third factor in model is proximity to market (T. Hutzschenreuter et al., 2010 and Stringfellow et al., 2007; Jensen and Pedersen, 2011; Contractor et al., 2010). Stringfellow et al. (2007) also notes that notable reason or benefit for service offshoring that is not present in the manufacturing is that offshoring can enable a
business to provide constant coverage for consumers who need round-the-clock support. According with Tate et al. (2010), Stringfellow et al. (2007) and T. Hutzschenerüeter et al. (2011) between these factors the low labour cost is definitely the most important. Furthermore, between the 2004 and 2006 versions of the annual Offshoring Research Network (ORN) survey the decision driver “access to qualified personnel” has grown from 42% to 66% of the respondent firms (Manning et al., 2009). This means that more companies are looking for qualified personnel during the decision making process evaluating the offshoring. Jensen and Pedersen (2011) are coherent with such findings and point out that while the lower cost of unskilled, labour-intensive processes is the main driver for firms that offshore less advanced tasks, the offshoring of advanced tasks is part of firms’ strategy to achieve international competitiveness through access to cross-border knowledge flows and foreign knowledge resources. Furthermore, Jensen and Pedersen (2011) work highlighted that services and advanced tasks represent a new wave of offshoring and outsourcing. Accordingly, Manning et al. (2009) stated that two important trends have emerged. For a growing number of companies, reducing labor costs is no longer the only strategic driver behind offshoring decisions. Accessing pools of highly skilled talent around the world (Bunyaratavej et al., 2007; Deloitte, 2004; Farrell et al., 2006; Lewin and Couto, 2007; Lewin and Peeters, 2006) has emerged as a new key strategic driver. Related to this, offshoring is no longer limited to standardized information technology (IT) or business processes, but increasingly involves product development functions, such as engineering, research and development (R&D), and product design (Engardio and Einhorn, 2005; Lieberman, 2004; Maskell et al., 2006; Patel and Vega, 1999; Subramaniam and Venkatraman, 2001). This new tendency includes not only standardized activities driven by cost savings and involving lower-skilled labour, but as highlighted in many studies (e.g. Baden-Fuller et al., 2000; Lewin and Cuoto, 2006) it also includes more sophisticated and advanced activities like research, design, engineering, and product development (Contractor et al., 2010). This fact was considered very important by academics and, in fact, Manning et al. (2009) coined the term next-generation offshoring to refer directly to this second offshoring trend. The number of scientists and engineers abroad, as well as their sophistication and technology absorptive capacity, has dramatically escalated as stated by Florida (2005). The academic research on reshoring has been focusing mainly on the manufacturing so far, a possible explanation is that manufacturing has started way earlier the offshoring process. The more mature offshoring initiatives were a much better example for scholars willing to study both back-shoring and near-shoring phenomenon. The purpose of this work is instead to analyse the back/reshoring phenomenon in business services. In fact, the white-collar offshoring and reshoring are following a comparable path to what happened for the manufacturing. The literature review concerning the manufacturing reshoring is although quite important because is much more consistent
and provides an initial point of view on the phenomenon. The offshoring of the services has followed a similar path of the offshoring in manufacturing as explained above in previous paragraph (T. Hutzschenreuter et al., 2011; Tate et al., 2010 and Stringfellow et al., 2007). Jensen and Pedersen (2011) with a similar approach attempted to fill this gap in services trends by exploring the antecedents to offshoring of advanced manufacturing tasks as well as advanced services tasks. For this reason, it is expected that the manufacturing reshoring might be an accurate indicator of the macro characteristics of the reshoring in the services industry (Stringfellow et al., 2007). The reshoring is a wide subject and that implies that it has to be deeply analysed before any empirical analysis, which is the ultimate objective of this work.

Table 3 reports the description by Jensen and Petersen (2011, page 2) which summarizes the fact that many industries started offshoring less qualified and less advances tasks (second column) and, later in the years, improved their offshoring strategies relocating progressively more qualified and advanced task offshore (the third column provides examples such tasks). In simple words the second column reports the starting tasks with which firms approached offshoring while the third column shows what companies pushed themselves to offshore in terms of qualified and advanced tasks.
Table 3: From less to more advanced tasks (by Jensen and Petersen, 2011 page 2 and coherent with Dossani and Kenney, 2007 and Lewin et al., 2009).

<table>
<thead>
<tr>
<th>Activities</th>
<th>Less advanced tasks</th>
<th>More advanced tasks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manufacturing</td>
<td>Volume production</td>
<td>Prototype or niche production</td>
</tr>
<tr>
<td>IT operations</td>
<td>Service operations</td>
<td>Systems integration and troubleshooting</td>
</tr>
<tr>
<td>IT programming</td>
<td>Testing; simple coding</td>
<td>Architecture and design of programs</td>
</tr>
<tr>
<td>IT development</td>
<td>Prototypes</td>
<td>Functional and non-functional needs; (e.g. user interface) ensure consistency with IT strategy</td>
</tr>
<tr>
<td>Customer service</td>
<td>Call centre</td>
<td>Contact centre (1st contact resolution)</td>
</tr>
<tr>
<td>Finance &amp; accounting</td>
<td>Bookkeeping</td>
<td>Financial management</td>
</tr>
<tr>
<td>Payroll &amp; HRM</td>
<td>Payroll</td>
<td>Recruitment; training</td>
</tr>
<tr>
<td>Logistics &amp; procurement</td>
<td>Purchasing</td>
<td>Supply chain management</td>
</tr>
<tr>
<td>Sales &amp; marketing</td>
<td>Canvas and telesales</td>
<td>Advertisement</td>
</tr>
<tr>
<td>Knowledge management</td>
<td>Business intelligence; Management information</td>
<td>Content design, production and management</td>
</tr>
<tr>
<td>Research</td>
<td>Patenting</td>
<td>Basic research; new inventions</td>
</tr>
<tr>
<td>Product development</td>
<td>Testing</td>
<td>User needs assessment</td>
</tr>
</tbody>
</table>
2.5 Why companies are implementing reshoring?

2.5.1 The characterization of back-reshoring phenomenon

As already observed for international divestments and de-internationalization, also back-reshoring strategies are rarely publicised, and generally avoid the net of public statisticians (Kinkel and Maloca, 2009). In this respect, Holz notes that a corporate strategy of this nature “usually proceeds in secret. Otherwise the management would have to admit to have made a serious strategic mistake” (2009). Moreover, since the unit of analysis on back-reshoring is often “below the level of plant (at the product or component level), public secondary data will be difficult if not impossible to obtain” (Gray et al., 2013). While acknowledging the incompleteness of current data sources on the investigated strategy, Gray et al. asserted that “as academics, we should both provide insight into the phenomenon based on existing research and consider whether we can study it to learn more about SCM [and International Business] location decisions” (Gray et al., 2013 page 5; see also Fratocchi et al., 2014). In order to reach such a result, as earlier noted, for the literature review this work adopted an exploratory research methodology (Babbie, 1989; Fratocchi et al., 2013), which is recognized as useful when “there is little theory available to guide the development of hypotheses” (Hair et al., 2011, 147). As known, exploratory research often relies on secondary research, such as reviewing available literature and data, “document observation and analysis to examine recorded opinions, reports, news stories” (Hair et al., 2011). Given the novelty of the topic, i have considered both, scholars’ and practitioners’ contributions. According to Fratocchi et al.(2014) in order to summarize such base of knowledge, two elements seem to be the most relevant:

a) antecedents of the investigated phenomenon;

b) geographical trends, in terms of host and home countries involved.

With respect, to the first element, variables proposed to motivate the back-reshoring diffusion are several. However, costs (of both, production and transport), quality and losses in operative flexibility are the most relevant. In Table 4, available literature findings are synthesized referring to Fratocchi et al. (2013).
Table 4: Reason for relocation by Fratocchi et al. (2013, page 23) with additional information from other authors.

<table>
<thead>
<tr>
<th>Reason for Back/Reshoring</th>
<th>Specifics</th>
<th>Authors</th>
</tr>
</thead>
</table>
| Reduction of costs’ gap between host and home country | - labour costs | Ritter and Sternfels, 2004  
Leibl et al., 2009  
Sirkin et al., 2011  
Kinkel, 2012  
Kinkel and Zanker, 2013  
Dachs and Kinkel, 2013 |
| | - freight costs | Goel and al., 2008  
Leibl et al., 2011  
Dachs and Kinkel, 2013 |
| Elements related to operational elements | - reduced operational flexibility  
- purchase order rigidity post issuance  
- penalization for late orders  
- container-size minimum orders  
- high inventory levels  
- reduced responsiveness to customer demand due to the physical separation of engineering  
- production and delivery time impact on product life cycle (i.e. fashion industry)  
- supply chain coordination costs increase  
-Invisible cost (influenced by all the above) | Kinkel et al., 2007  
Dachs and Kinkel, 2013  
Kinkel and Zanker, 2013  
Ferreira and Prokopets, 2009  
Ritter and Sternfels, 2004  
Ferreira and Prokopets, 2009  
Ferreira and Prokopets, 2009  
Accenture, 2011  
Ritter and Sternfels, 2004  
Leibl et al., 2011  
Kinkel and Maloca, 2012  
Dachs and Kinkel, 2013  
Stringfellow et al., 2007 |
| Quality | - poor product quality | Agrawal et al., 2003  
Kinkel and Maloca, 2009  
Leibl et al., 2011  
Kinkel, 2012  
Dachs and Kinkel, 2013  
Kinkel and Zanker, 2013 |
| Competences availability | - lack of well-prepared technicians and skilled workers at the host country | Couto et al., 2008  
Kinkel and Maloca, 2009  
Shiry et al., 2009  
Leibl et al., 2011 |
<table>
<thead>
<tr>
<th><strong>Host country elements</strong></th>
<th>- national/regional subsides for relocation</th>
<th>Sirkin et al., 2011</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>- home (US) labour market flexibility</td>
<td>Amighini et al., 2010</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Sirkin et al., 2011</td>
</tr>
<tr>
<td></td>
<td>- high unemployment rates at the home country</td>
<td>Sirkin et al., 2011</td>
</tr>
<tr>
<td></td>
<td>- laws regarding taxes, employee benefits, torts and pollution abatement</td>
<td>Leonard, 2008</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Shiry et al., 2009</td>
</tr>
<tr>
<td><strong>Financial elements</strong></td>
<td>- exchange rate risk (US dollar against Chinese Yuan)</td>
<td>Leibl et al., 2011</td>
</tr>
<tr>
<td></td>
<td>- financial resources for direct investments shortage</td>
<td>Bailey and De Propris (2014)</td>
</tr>
<tr>
<td><strong>Knowledge elements</strong></td>
<td>- loss of know-how in the host country</td>
<td>Dachs and Kinkel, 2013</td>
</tr>
</tbody>
</table>

Furthermore for a long time, the most reliable observations derived from the “Innovation on Production” survey developed by the Fraunhofer Institute for Systems and Innovation Research in 1997 (Kinkel and Wengel, 1998). The three waves of the survey confirm that the initial relocation decision is revised after three-five years (Kinkel and Maloca, 2009). Data on average time after the decision is revised in the ORN database are reported in tables 5 and 6.
Table 5: Average age of the offshoring initiative when they are revised to implement Reshoring (ORN Database). Data expressed in years between the first offshoring implementation and the Reshoring implementation decision.

Table 6: Average age of the offshoring initiative when they are revised to implement Backshoring (ORN Database). Data expressed in years between the first offshoring implementation and the Backshoring implementation decision.

The reported tables from ORN database denote that the years after which the offshoring is revised in favour of Back/reshoring are usually 7.55 years for Backshoring and 8.30 years for Reshoring, in contrast with Kinkel and Maloca (2009). Furthermore, while the analysis conducted by Kinkel and Maloca (2009) took into account only German firms the ORN data comprehend a vast variety of home countries for the firms
being analysed. This evidence induced Kinkel and Maloca (2009) to conceptualize the phenomenon under investigation as a “short-term corrections of prior location misjudgements, rather than long-term reactions to slowly emerging local development trends” (2009, p. 159). These findings are consistent with the previously mentioned study by Casson (1986) and should induce to further investigations into the behavioural causes of wrong investments (Malmendier and Tate, 2005; Li and Tang, 2010, Gray et al., 2013). This interpretation, shared a possible explanation of the phenomenon also by Fratocchi et al. (2014); it will be described further as one of the two school of thought raised from the paper review. However, more recently Dachs and Kinkel (2013) explicitly recognised that back/re-shoring may depends not only on managerial mistakes in evaluating the production relocation – that is, overestimation of benefits and/or underestimation of costs belonging to operate abroad – but also on (long term) deterioration of ownership, locational and internalisation advantages (Dunning, 1995) on which the initial off-shoring decision was based. This approach lead me to structure the second line of thought on the subject under investigation. More recently, data on the back/re-shoring phenomenon became available for other eight European countries (Austria, Croatia, Denmark, Finland, Netherlands, Slovenia, Spain and Switzerland) thanks to the European Manufacturing Survey (EMS) implemented in 2009. First, it is worth noting there is a quite relevant difference in terms of magnitude of the phenomenon among countries. More specifically, the percentage of interviewed firms which back-reshored between 2007 and mid-2009 ranges from 2% in Germany to more than 7% in Spain, Denmark and Finland (Dachs and Kinkel, 2013). back-reshoring Firms are generally large and operate mainly in motor vehicles and transport equipment industries. With respect to host country trend, longitudinal data belonging to German firms clearly show the majority of repatriation comes from new eastern European Community countries (usually called EU 12) which represented 39% of cases in 2004-06 period, 51% in 2007-09 and 49% in 2010-2012. This is consistent with previous findings on destination for international sourcing strategies implemented by European companies (see, among others, Alajäskö, 2009; Daudin et al., 2011). The second geographical area is represented by Asian countries (other than China) which increased from 13% to 27% in the period under investigation. Finally, back/re-shoring from China grew up from 2% in 2004-06 to 14% in 2010-12. As stated by Fratocchi et al. (2014) the study of the geographical trends may lead to deepen our understanding of the phenomenon, the authors suggested geographical tronds as one of the most interesting subject for future research. Analysing data of EMS for the nine European countries, Dachs and Kinkel (2013) confirmed that EU 12 countries are the most represented even if “Asian locations are involved in about one fourth of the back-shoring observations”. However, cases of back/re-shoring belonging to high-income countries (mainly USA and EU 15 one) “together account for around a fifth of all back-shoring” (Dachs and Kinkel, 2013). With respect to USA, there are not specific data,
but some panels conducted by consulting companies underline the phenomenon’s relevance for top managers (Fratocchi et al., 2014; see also Ferreira and Prokopets, 2009; Lewin et al., 2009). Similar evidence is available also for the United Kingdom (Flangan, 2009). Regarding France and Spain, the literature review we conducted, along with previous academic investigation (Leibl et al., 2011), found no evidence of manufacturing back-reshoring activities. The lack of data for Spanish off- and back-shoring has been partially explained in terms of Spanish concerns about cultural differences and customer hostility to off-shoring strategies (Agnese and Ricard Costa, 2006).

Currently two different school of thought were born to explain the booming of reshoring around the world. The first idea is the initial relocation decision is usually revised after three-five years. This evidence induced Kinkel and Maloca (2009) to conceptualise the phenomenon under investigation as a “short-term corrections of prior location misjudgements, rather than long-term reactions to slowly emerging local development trends”. These findings should lead to further investigations of the behavioural causes of wrong investments (Gray et al., 2013, Li and Tang, 2010). Accordingly, Stringfellow et al. (2007) stated that reshoring is the answer to the failure of the offshoring and that this failure is often the result of not taking the invisible costs created by communication and cultural friction into account. Invisible costs and cultural distance are very important factors that will be deeply discussed further in this work. However, more recently, Dachs and Kinkel (2013) explicitly recognised that back-reshoring may depend not only on managerial mistakes in evaluating the production location, that is, overestimation of benefits and/or underestimation of costs, but also on long-term deterioration of ownership, locational and internalisation advantages (Gales, 2008) on which the initial off-shoring decision was based. Finally, Kinkel (2014) estimates that 20% of total German companies’ reshoring decisions are mid- or long-term reactions to changes in the local environment, while the other 80% are pure corrections of managerial mistakes. This second explanation was also suggested by Martínez-Mora and Merino (2014) after their analysis on Spanish manufacturing companies, “the interviewed firms have reshored their manufacturing activities due to the emergence of new factors in the environment that did not exist when the offshoring strategy was adopted.” (page 12). Overall that implies that two are the possible reasons that are forcing the companies to reshore: short- term repair due to initial mistake in the project evaluation or mid/long-term strategy modification due to the change in the overall conditions in the host country such as labour costs, laws, government policies, currencies exchange rates, market evolutions, etc. In the next paragraphs the paper will analyse these two very different causes for the reshoring.
Please note that, although these failures are commonly recognized, the offshoring trend is still positive (Hutzschenreuter et al. 2011; Stringfellow et al., 2007; Miroudot et al., 2009; Contractor et al., 2010). This is an important reflection that deserves deeper analysis in the empirical study further in this work because the phenomenon of re-shoring is actually extremely limited in size compared to the growing internationalization of companies (offshoring). In a sense, the two phenomena are related and it is understandable that an increase in the absolute dimension of the offshoring, is related to increases in absolute size of back/re-shoring. In this respect an interesting analysis will study the growth percentage of offshoring and reshoring because they may not be equal.

2.5.2 Which are the common misjudgements in evaluating the offshoring?

Implementing offshoring is indeed a very crucial decision. Unfortunately for many firms, evaluate correctly the possible scenarios and every aspect is quite challenging and thus complicated. In many cases the companies are unable to identify every factor involved or cannot realize the importance of some of them under estimating their influence on the overall outcome (Hahn and Bunyaratavej, 2009). In other cases, particularly in the recent past, the companies where not only underestimating the issues and drawbacks of offshoring but also overestimating the benefits of the process itself. According to Pisano and Shih (2009) “Corporate management must overhaul its practices and governance structures so they no longer exaggerate the payoffs and discount the dangers of outsourcing production and cutting investment”. Clearly, the second possibility can be considered a mistake in the evaluation process, (Gales, 2008). If the company, instead, experience costs that were not recognized before implementing the relocation the literature usually refers at those as “hidden costs”. Larsen et al. (2011) identified some specific “hidden costs” of such a strategic decision, that is “unexpected costs resulting from the relocation of business tasks and activities outside the home country”. Concerning firm and industry specific factors, the level of influence of these and other factors varies and to some extent depends on the nature of the offshored tasks. Jensen and Pedersen (2011) found that the antecedents of offshoring advanced manufacturing tasks to some extent vary from those determining firms’ propensity to offshore advanced service tasks. The results of their study indicated that this in part may be explained by the level of prior experiential learning in the firms. They have also found empirical support to show that the more offshoring experience accumulated in the firm, the more advanced are the offshored tasks, this also implies higher success rate of high tasks services. Moreover, since large MNCs have usually gathered more experience in offshoring projects, due to the fact that they have implemented many of them, it is possible to hypothesize that large firms have implemented more effective offshoring projects resulting is a lower probability of
back/reshoring. This led to the formulation of an hypothesis, resulting in proposition 1 below.

Proposition 1: the size of the company influences the probability of future back/reshoring initiatives to corrects previous mistakes. Where success means low probability of back/reshoring. The bigger the size of the offshoring firm, the lower the probability of future back/reshoring. Offshoring tasks generally represents a more mature business practice, and thus a higher level of expertise, whereas service offshoring in comparison is a more recent phenomenon. As a consequence, firms are unable to draw on a similar level of experiential knowledge when they engage in advanced service offshoring. This fact puts many firms in a risky position when performing offshoring.

2.5.2.1 Unexpected visible costs
Stringfellow et al. (2007) urges us to look at other unexpected visible costs, such as labor turnover rate, transporting employees to work, providing worker’s accommodation (typical in China, according to Tate et al., 2013) and the cost of updating infrastructure. Labour turnover, in particular, is very critical as shown by Stringfellow et al. (2007) with examples: “Indian operations in business processing often lose 15–20% of their work forces each year”. As a result the companies are constantly recruiting and adding to this the growing of skilled labour shortage in emerging countries (Tate et al., 2013) the recruiting requires more time. Moreover, the new personnel needs training. As a result the cost of the extremely high turnover rate cannot be ignored. Infrastructure issues, such as power blackouts and telecommunications weaknesses may interrupt operations, thus lowering productivity and incurring additional operational expenses. Visible costs, such as those above, are unfortunately only part of the total costs, there exist invisible costs, related to the use of foreign service providers that impact offshored services. These costs are analysed in the next paragraph.

2.5.2.2 Hidden costs
As pointed out by Stringfellow et al. (2007) and Fratocchi et al. (2013), while the cost-savings from offshoring service work are usually clear, operating at a distance also brings with it certain “invisible costs”. Invisible costs refer to the costs that are not always apparent to firms making the decision to provide services from offshore locations. The central issue is how we determine invisible costs. Just as the word “invisible” implies, we may not be able to explicitly and accurately quantify them. But we can certainly try to identify factors that influence those invisible costs from operational and cultural perspectives. These costs, according to Stringfellow et al.
may be categorized as: (1) invisible costs associated with reduced customer service quality and (2) invisible costs due to ineffectiveness (taking longer time and expending more effort to do the same amount of work correctly). However, offshore processes do not all incur invisible costs to the same extent. In addition, the invisible costs depend on the particular country selected for services offshoring (Larsen et al., 2013). To define more specifically hidden cost we can refer to them as the challenges inherent in the implicit trade-off between cost and quality. Interest of the managers is to find out how to maximize the benefits of services offshoring while minimizing the associated drawbacks.

Service offshoring decisions are traditionally made on the basis of visible costs, notably labor costs. For example, the hourly cost of a customer contact center worker is estimated to be U.S.$ 13–15 in China, U.S.$ 13–18 in India and the Philippines, and U.S.$ 25–32 in the Czech Republic (Stringfellow et al., 2007). These costs are dramatically lower than the estimated U.S.$ 30–60 for a similar worker in the United States. Service and knowledge work is highly labor-intensive, so from a pure cost perspective, it would seem to make sense to outsource as much of this knowledge work as possible to offshore sites where labor is less expensive than in the United States, Europe or other industrialized countries.

From a pure cost perspective, it make apparently sense to outsource the maximum portion of knowledge work to offshore locations in which the less expensive labour (with respect to West Europe, U.S. or other industrialized countries) can guarantee significant cost savings. Anyway, there are visible costs that might be underestimated, for example labor turnover rate, as noted by Weidenbaum (2005), or transporting employees to work and the cost of updating infrastructure (Stringfellow et al., 2007). An example is provided by Peterson, the author noted that the call center AOL runs in Bangalore is constantly recruiting personnel (2002). Furthermore, in Bangalore and other Indian cities there is a very high demand for labor. The consequence is that companies are pushed to hire less qualified employees and to overcome this issue firms putting huge efforts (mainly in training and apprenticeship) in order to provide to employees the needed skills. Continuous recruiting and training (along with time and efforts used) are generating additional visible costs that have to be considered. Other visible costs, as suggested by Stringfellow et al. include infrastructure problems (power blackouts, telecommunications malfunctions) that may hamper operational productivity and generate additional costs (2007). In the words of Stringfellow et al. (2007), visible costs represent only one part of the total costs that offshoring firms are sustaining. As urged by Stringfellow et al., a big portion of invisible costs can be considered hidden communication-related costs and are related to the impact of foreign employees in offshored services (2007). One example of hidden costs is
provided by Anton and Setting, who reported data from a survey related to U.S. clients, 66% of the respondents declared that they would have reduced (or even stop) their purchases from firms using offshore foreign customer service representatives (2004). In this case the acquisition costs of new customers (raising due to low customer retention) to compensate those whom have ceased or reduced their purchases are the invisible costs. As reported by Brewin (2003), Dell repatriated (backshored) its corporate contact center from New Delhi back to United States in order to avoid such risks. The main problem consist identification of invisible costs since, as the word “invisible” suggests, there are difficult to explicit and quantify. The authors also asserted that such invisible costs derive from the very characteristic structure of services. In the first place, certain type of services comprehend intangible components and activities, meaning that they are hard to scan, identify and specify, while manufacturing has outputs and products which are perfectly tangible instead, with explicit specifications. Secondly, still according to Stringfellow et al. (2007), another service unique characteristic that have also been subject of discussions and scholars’ studies is the fact that the client participates to service processes in many cases of customer services. While some kind of services need customer implication (this might change in the degree of involvement from the necessity of the physical presence during the service process to the active participation to the service production/delivery); manufacturing, instead, does not require customer participation in the factory. The straight forward operational implication for the firms is the importance of making customer involvement in real time and across distance easier (the same stands for a colleague in case of intern-company services). The last and third point focuses, according to Stringfellow et al., on the most talked-about problem in the service industry that is service quality (2007). Service quality is a sensitive subject because of its high degree of subjectivity. Apparently, as noted by Stringfellow et al. (2007), offshoring carries the risk of customers alienation that potentially can cost the company the loss of a customer in the eventuality that the experience is judged negatively. In this situation the generated invisible costs consist of the lost revenues (an alienated customer will probably stop his purchases) and the new customer attraction costs; these costs are often ignored during the offshoring decision process (Stringfellow et al., 2007). This last consideration determined the next proposition.

Proposition 2: cultural distance and his consequence on both service quality and invisible costs are often ignored or not properly considered in the offshoring decisions (particularly the location decision).
2.5.2.3 Cultural distance and cultural alignment

The impact of culture on international business activities has long been of interest to scholars (e.g., Gales, 2008; Stringfellow et al. 2007; Hahn and Bunyaratavej, 2009). One of the more important research frameworks in this area is that of Hofstede. Hofstede developed comprehensive measures of culture in terms of four primary factors, summarized by Kirkman et al. (2006). Uncertainty avoidance (UAI) deals with a society’s tolerance for uncertainty and ambiguity, as well as referring to individuals’ search for Truth. This cultural dimension indicates to what extent a culture shapes its members to feel either uncomfortable or comfortable in unstructured and ambiguous situations. Power distance (PDI) is the degree to which the less powerful members of organizations and institutions (including the family) accept and even expect that power is distributed unequally. Individualism (IDV) (versus collectivism) involves the extent to which individuals are more or less tightly integrated into groups. Specifically, individualistic societies are those in which the ties between individuals are looser – everyone is expected to principally look after him/herself and his/her immediate family. Masculinity (MAS) (versus femininity) refers to the distribution of roles between the genders which is another fundamental issue for any society to which a range of solutions are found. In particular, more masculine societies view roles as more rigidly a function of gender while in more feminine societies gender is less of a barrier to roles and more freedom regarding role selection is tolerated.

Authors have long noted that similarities in culture between a host country and home country provide many benefits to a firm. In a more similar culture, firms will likely be able to reduce transaction costs that might occur from training and acquiring information and reduce the costs of doing business abroad (Hahn and Bunyaratavej, 2009). It can be straight forward deduced that the bigger the distance in between the “home” country and the “host” country the higher these costs due to cultural distance. Expectations between managers and employees are generally better aligned in more similar cultures, which tends to lead to fewer miscommunications, greater trust and better teamwork (Stringfellow et al., 2007). Even though the theoretical perspective shows that the cultural distance is influencing the costs and consequently the outcomes from offshoring initiatives it is still very much under evaluated by companies and managers in the decision making process (Gales, 2008). This has been recognised one of the most important misjudgements and that is why it will be very deeply discussed further in this work with the support of the empirical analysis.

I will now try to synthetize a short practical analysis on the influence of the cultural distance on the service delivery, in particular the service content or offering.
Service content is “what” service firms offer to customers, being tangible (e.g. hamburger, income tax form, report) or intangible (e.g. feeling great after a counselling session). If the service offering is well defined from the service providers’ perspective; and customers understand and agree on those service specifications, interaction between customers and service providers can consist of minimal to programmable dialogues. For example, finding the location of the service facility can be answered through simple scripts or an FAQ list posted on the Web. When the service offering is well defined from the service providers’ perspectives, but customers are not clear what service firms are offering and/or customers’ expectation of service offerings differs from service specifications defined by service firms, interaction intensity has increased. Service providers have to use a combination of scripts and open-ended questions to bridge the perception difference. IT technicians often have to deal with customers who report that their computers are not working but do not know how to describe or articulate the problem. The initial interaction requires service providers to have significant knowledge of the field and ask the right questions to diagnose the problem. Once the problem is identified, service providers can use a standard script to deliver the solution. On the other hand, when customers know what they want and service providers cannot articulate their service offerings (e.g. customers know what kind of Web interface they want while service providers do not know whether they can accomplish that), in-depth interactions between customers and service providers are needed to bridge the gap. The extreme condition occurs when neither customers nor service providers are able to clearly identify the required and available service offerings. According to Stringfellow et al. (2007), complex IT projects, new service development and some rare medical cases would fall into this category. There is no script to follow. Experience, intuition and expert knowledge all play a part. Interaction between service providers and customers is very intensive. Based on the above discussions, we postulate the following. Coherently with this thoughts Stringfellow et al. (2007), confirmed with an empirical study their own proposition stating that interaction intensity is influenced by service offerings. This implies that the importance of the cultural distance also varies with the interaction intensity and how precisely the service offering is perceived from both customer and service provider. When service offerings are well defined from both customers’ and service providers’ perspectives, interaction intensity is low; when service offerings are not well defined from both customers’ and service providers’ perspectives, interaction intensity is high.

2.5.2.4 Industry acceptance

According to Hutzschenreuter et al. (2011) the internal motivation to achieve cost savings was reinforced by industry acceptance and by competitive pressures in both the countries subject of their study (Germany and US). During the decision process
firms assessed the given situation during management assessments and decided to imitate what others did. This means managers acting within the same institutional configuration are often motivated to decide to relocate activities by what their competitors are doing. The behaviour of these followers ended up in a less thought out decision processes and thus into worst outcomes for the offshoring process.

According to Pisano and Shih (2009) “The World Is Not Flat” the authors used that expression to emphasize that the geographical and cultural distance may erode companies’ knowledge. A foundation for innovation and competitiveness, a commons (terms which refers to the common knowledge available in the industry) can include R&D know-how, advanced process development and engineering skills, and manufacturing competencies related to a specific technology. Such resources may be embedded in a large number of companies and universities. Software knowledge and skills, for instance, are vital to an extremely wide range of industries (machine tools, medical devices, earth-moving equipment, automobiles, aircraft, computers, consumer electronics, defense). Similarly, capabilities related to thin film deposition processes are crucial to sophisticated optics; to such electronic products as semiconductors and disk drives; and to industrial tools, packaging, solar panels, and advanced displays. The knowledge, skills, and equipment related to the development and production of advanced materials are a commons for such diverse industries as aerospace, automobiles, medical devices, and consumer products. Biotechnology is a commons not just for drugs but also for agriculture and the emerging alternative-fuels industry. More often than not, a particular industrial commons will be geographically rooted. For instance, northern Italy is home to a design commons that feeds, and is fed by, several design-intensive businesses, including automobiles, furniture, apparel, and household products. The mechanical-engineering commons in Germany is tightly coupled to the country’s automobile and machine tool industries. The geographic character of industrial commons helps to explain why companies in certain industries tend to cluster in particular regions—a phenomenon noted by Michael Porter and other scholars. Being geographically close to the commons is a source of competitive advantage. What about the popular notion that distance and location no longer matter, or, as Thomas Friedman put it, “The world is flat”? Pisano and Shih (2009) clearly agreed with the general idea that geographic boundaries to trade are falling and that the global economy is more intertwined than ever, position I am completely coherent with, the evidence suggests that when it comes to knowledge, distance does matter. The reference here is not only to the industrial districts but also to geographical regions. In conclusion the movement of the supply chain in different regions sometimes is forcing companies to offshore. This means that sometimes
companies are not influenced by industry acceptance as itself but from an “industry offshoring” in which the supply chain as a whole is offshoring abroad.

2.5.2.5 Quality issues

As shown by Martínez-Mora and Merino (2014) maintaining the quality of the manufacturing moved abroad is a serious task, much more important then expected. In the sample they analysed the companies which implemented offshoring of their mid-high and high segment products failed. They moved partially or totally the production to China. But given the characteristics of their output, their competitive strategy is not based on costs, however they moved their manufacturing tasks to low wage countries so as not to miss out on the comparative advantages in terms of cost that were being enjoyed by other. This shows also the phenomenon industry acceptance discussed in the previous paragraph. Their high and mid-high ranges of footwear required the almost permanent presence of highly qualified technical and managerial staff to supervise quality levels. None of these two companies fulfilled the objectives sought with offshoring and experienced consistent quality decrease. These two firms completely reshored their products back to Spain and their current strategy consists of reinforcing the differentiation of their products, based on quality, marketing, distribution and brand with the distinguishing feature of “made in Spain”.

Accordingly, Fratocchi et al. (2014) stated that monitoring the quality level can be complicated and that makes complicated to maintain the desired quality during time.

Examples of unexpected quality problems in services industry are shown by Stringfellow et al. (2007), they reckon foreign employees often do not have a full understanding of the business environment and customer expectations for high service quality and prompt delivery of services toward american or european customers. This is particularly important for those services, such as call center, where the service delivery implies direct contact between customer and supplier from different cultures. As a result, there exist invisible costs, related to the use of foreign service providers that impact offshored services. We define these invisible costs as hidden communication-related costs associated with the use of foreign service providers.

2.5.2.6 Distance between production and R&D

The fact that offshoring now also encompasses various types of advanced high-end services, R&D, innovation, or similar types of advanced business tasks within both services and manufacturing domains has been subject to considerable interest in the academic world (see, e.g., Bardhan and Kroll, 2003; Dossani and Kenney, 2007; Ernst 2006; Lewin and Couto, 2007; Lewin and Peeters, 2006; Manning et al., 2008; Jensen
and Pederson, 2011; Berry, 2014). The offshoring of R&D departments deserved to be analysed separately because of its particular characteristics. Even between the services and business units that have been offshored R&D is usually likely to be maintained in the “home” country, at least at the beginning of the initiative (Berry, 2014). Prior to the 1990s’ surge in advanced offshoring, Reich (1991) highlighted the importance of task characteristics, pointing out that the globalization of the world’s economy entailed a divide between standardized tasks in low-wage economies and high value-added tasks in high-wage economies, where the right knowledge and skills are available. Reich also stated that all jobs of “symbolic analysts” (Reich’s term for knowledge workers) are subject to relocation considerations. “Knowledge workers,” a term originally coined by Peter Drucker (1959), is defined as encompassing scientific and engineering personnel, including managers and specialized professionals, in such areas as marketing, legal services, and industrial design. They provide essential support services to research, development, and engineering (Jensen and Pedersen, 2011). Other scholars (e.g., Bardhan and Kroll 2003; Gereffi et al., 2005) have similar considerations regarding the level of task complexity and the possibilities for transferring these tasks across firms and locations. To illustrate the logic in their distinction between high and low tasks services, Jensen and Pedersen (2011) using the disintegration of the supply chain explaining that R&D, which is commonly regarded as an advanced, higher order activity. However, in addition to its more advanced tasks, R&D also includes less advanced, standardized, and routine tasks, such as tests, patent applications, and documentation. These second kind of tasks are the easiest to offshore and the ones in which concern companies should not be worried about. One first reason why companies are resilient about R&D offshoring is that at the beginning the companies are starting with manufacturing relations and are not willing to commit immediately in the new location but instead implementing progressive investments, which is also a correct approach which has been demonstrated effective by Vivek et al. (2007). The second explanation is that in certain “host” countries such as China (as explained in the next paragraph) the skilled labour shortage does not insure to the companies the availability of highly qualified personnel indispensable for R&D activities. The result is that often R&D and product design are separated from manufacturing, the consequence is, as stated by Tate t al., (2010) that “Innovation also suffers from the physical, and sometimes cultural, distance between manufacturing and design operations”. According to Berry (2014) the R&D is one of the least internationalized activities of firms. The costs associated with managing dispersed knowledge activities and the difficulties associated with trying to share and integrate knowledge across distances make international R&D strategies complicated to implement and difficult to oversee. The consequence is that firms based in very different home countries pursue relatively little of this, choosing instead to concentrate the vast majority of their R&D and innovative activities in their home
country. Even if, as Berry’s empirical results show, multi-country collaborative innovations draw on a wider pool of technological knowledge than single country innovations companies are reluctant to do so. The obvious consequence is a degradation of the ability to innovate due to the geographical distance between R&D and manufacturing and the competitive disadvantage of not enhancing the flexibility and formation of new innovation processes within multinational corporations which are the biggest advantages of multi-country innovation (Berry, 2014). As it was said earlier in 2.3.1.1 paragraph, Pisano and Shih (2009) claim that foundation for innovation and competitiveness, advanced process development and engineering skills, and manufacturing competencies related to a specific technology. Such resources may be embedded in a large number of companies and universities. Clearly this is one of the reasons of the birth of the industrial districts and emphasizes the importance of geographical proximity in the development of innovative and cutting-edge technologies.

As demonstration of the importance of co-localization of R&D and production Berry (2014) also mention two examples. During 2011, Ford announced how they had established one lead product development engineering center for each vehicle (for the Focus, this center is in Germany), with each hub supported by regional engineering centers to help deliver products tuned to local market customer preferences. Ford has thus created both specialized production with high levels of knowledge sharing across its subunits so that its world car can both be produced more efficiently through global platforms and offer advances in technology that come from different locations. The second case is going back to 1997, when Hewlett-Packard’s (HP) Singapore operations evolved from a manufacturing site that produced calculators for other MNC operations to one that performed R&D and co-developed a new printer for HP. In HP’s case, in Berry’s view, product integration created opportunities for new knowledge generation, while also reducing biases against foreign R&D and inertial tendencies around R&D. It must be said that the drawbacks of the distance between R&D and production might see a decreasing trend since, as recognized by Manning et al. (2009) and Jensen and Pedersen (2011) there is a raising trend of offshoring high task services to emerging countries, this tendency also involves the global sourcing of S&E talent. That is in response of science and engineering (S&E) in advanced economies (Manning et al., 2009). As empirical demonstration of such trend Manning et al. (2009) also reported that Product Development (R&D, Engineering and Product Design) is the function with the second highest growth rate (after IT function) since the nineties. The percentage of companies that were involved to their study, which were the respondent to the ORN survey by Duke University, that have implemented the offshoring of Product Development functions is was above 40% in 2007’s survey. However we should not forget, as said earlier in this paper, that according to Manning et al. (2009) the majority
of high-end product development and engineering activities are still being carried out in the advanced Western economies (see also Disher and Lewin, 2007).

Grimpe and Kaiser (2010) provides further support for the trade-off between incremental benefits and incremental costs (inefficiencies), as they emphasize that R&D outsourcing involves ‘pains’ as well as ‘gains’. The ‘pains’ stem from dilution of resources, deterioration of integrative capabilities, and high demands on management attention. Accordingly, they find evidence for an inverted U-shaped relationship between R&D outsourcing and innovation performance. In this sense the authors were able to explain some of the reasons why many companies are still resilient from implementing R&D offshoring and why many other are bringing back R&D into their home countries.

2.5.3 Which specific conditions have changed and where?
As note by Ellram et al. (2013) the factors involved in the location decision are constantly changing and have changed a lot over the years. Some of these factors have changed as expected with the developing of the host countries but some of them were totally unexpected. In the next section the aim is to try to identify the most relevant and to put them into a geographical context.

2.5.3.1 Labor cost gap is decreasing
The cost gap between the United States and China is decreasing. Currently, China is roughly on par with India and Mexico from a total cost perspective, and may be on par with lower-cost regions of the United States by 2015 (Macchion et al., 2014). These resources often seem ubiquitous, like cheap labour seemed in China 10 or 15 years ago. However, as demand for semi-skilled, adaptable labour has grown in China’s manufacturing core, the labour supply cannot keep up, causing wages to increase by 15%—20% a year (Sirkin, 2011). Other forecasts are also suggesting that the trend will continue in the future. Kinkel (2014), quoting a 2011 white paper from BCG (Made in America. Why Manufacturing will Return to the US, 2011), asserts that in the next 5 to the 10 years cost advantages of important low-wage countries, in particular China, maybe gradually eroded by higher wage increases.

Since the wages levels are very different inside China, companies have started to move toward lower labour costs in inland China, but these more distant regions have longer supply chains, which drives higher transport cost and pipeline inventory, partially offsetting some of the labour cost benefits (Sirkin, 2011). That is noteworthy since labour comprises only a portion of the total cost of doing business, other costs of doing business must also be competitive or less expensive to make a manufacturing location
attractive. Along with the cost of labour, labour cost stability as an increasingly important factor influencing manufacturing location decisions (Tate et al., 2010). Coupling wages raise in low-cost countries with the improving ratio of U.S. labour output/productivity per labour dollar we can clearly identify the labour cost advantage erosion in the offshore locations. The improved labour output/productivity ratio has also been, in fact, a significant factor in making the reshoring decision more attractive (Stringfellow et al. 2007). For example, when GE decided to move its GeoSpring water heater from China back to the United States, it collaborated with its workforce and was able to reduce direct labour hours from 10 to 2, while at the same time reducing materials costs and quality costs. As a result, the price of the U.S.-manufactured unit was $1,299 versus $1,599 for the China-manufactured unit (Stringfellow et al. 2007).

2.5.3.2 Skilled labour shortage in low-cost countries
There is a growing shortage of skilled and semiskilled labour in China (Tate et al., 2013). The Economist recently reported that China’s labour market is overstretched and all high-quality labour has been exhausted (Sirkin et al., 2011). Availability of skilled labour also became a problem in India when many companies offshored their call center services (Kinkel and Maloca, 2009). In similar conditions, firms had to hire people with lesser qualifications; consequently, quality became a problem. Fratocchi et al. (2014) agrees writing that the of lack of available labour “erodes the comparative advantages of the location”.

2.5.3.3 Energy cost
Energy represents an important manufacturing cost. Currently, the United States has the lowest cost per megawatt of any country according to Tate et al. (2010) who is reporting to the International Energy Agency, is second-lowest (to Canada) on the cost of industrial natural gas, and is second lowest (to Mexico) on the cost of diesel fuel. Clearly, the attractiveness of U.S. energy costs contributes to it being a very favourable location when serving markets in the Western Hemisphere (Sirkin, 2011). China’s energy costs have continued to rise due to shortages in energy supplies and significant dependence on imports. To the extent that energy costs influence transport costs and their stability, the stability of these costs is recognized to become more important over the next 3 years (Tate et al., 2013).

2.5.3.4 Currency exchange
Currencies volatility might be seen as a misjudgement or a chance in the environmental conditions. As reported by Tate et al. (2010) the presence of companies which have under estimated the importance of this factor is balanced by the ones
which have always been conscious of it is importance. Since recent events (few of them are mentioned below) have shown how sharp and difficult to predict currencies fluctuations are, I decided to consider them as mainly an external factor which has changed the original circumstances.

Real and anticipated volatility in currency valuation increases, in fact, the risk of doing business outside of one’s own currency. From June 2003 to June 2013, the Chinese Yuan strengthened by 35% against the U.S. Dollar, which makes the price of Chinese goods much less attractive in the United States (“Reshoring Manufacturing”, 2013). These are very important factors and they might be very difficult to forecast precisely. The impact of the Turkish Lira in 2013 has for instance forced companies to modify internal flows of materials and products redirecting the production manufactured in Turkish plants into other countries since the prices were unsustainable for Turkey’s internal market. A quick overview of such event will help to clarify such effects of currencies fluctuations.

During in interview in 2013 Frontier Strategy Group Expert Advisor Kerim Kotan described consequences on firms of the Turkish lira depreciation in spring and summer 2013 after the “taksim square crisis”. The Turkish lira lost 13% against the dollar in the 2nd and 3rd quarters of 2013 due to political instability and has been one of the worst-performing emerging-market currencies that year (data from OECD, the Organization for Economic Co-operation and development). There are winners and losers from the lira’s weakness through: local companies and MNCs operating in lira and importing heavy raw materials or parts into Turkey are suffering from rising input costs. On the other hand, companies producing locally and exporting from Turkey are benefitting from Turkey’s stronger export position (that was, for instance, the issues Pirelli incurred that caused product flow re-thinking to be overcome). While Turkey’s central bank could hike interest rates to strengthen the lira, the banks resisted such a move as it would slow down the economy at a time when exports to the EU are already being hit by the sovereign debt crisis. Plus, an exchange rate hike will only be effective if there is exchange rate stability. If the lira is rapidly depreciating against the dollar, interest rate hikes are seen as a desperate move by the central bank, causing additional portfolio investment flight and further driving down the lira. Similar situations happened in Brazil due to the depreciation of the Real (-31% against U.S. dollar in 2013), which has eroded the profitability of the internal market, or in Russia after the recent sharp drop of the Ruble which forced a few luxury companies (Maserati was one of them) to stop the selling of their products in the country. Furthermore, according to Tate et al., 2010, the Chinese Yuan is currently undervalued and will be revalued to be less favourable to the U.S. Dollar. In addition to that, concerns exist regarding whether the Chinese government will continue to maintain a
monetary policy that is intended to keep the Yuan relatively weaker than its developed-market trading partners.

2.5.3.5 Shipping time/customer proximity

Slowing of the global supply chain due to shipping industry adoption of slow-steaming ocean freight has increased the length of global supply chains in real time. Yet, companies want to reduce the length to better manage inventory levels and working capital, and to be more responsive. Slow-steaming reduces the ships’ speeds, CO2 emissions, and fuel usage. New ships are being built to optimize performance at slow-steaming speeds. Transit time from Shanghai to the West Coast of the United States has gone from 15 to 17 days, while it has increased from 29 to 35—36 days to the East Coast (Solomon, 2012). For example, when the GeoSpring water heater was manufactured in China, the time from completion, to delivery, to the retailer was 5 weeks: 4 weeks on the water and 1 week to clear customs and arrive at the distribution center. Now it takes 30 minutes for GE to get the finished product to its distribution center (Fishman, 2012). This fast response time and leaner supply chain associated with locating manufacturing close to the end customer/ consumer saves working capital in inventory and improves responsiveness to changes in demand. Tate et al. (2013) stands that the surveyed companies in his empirical work indicated that distance between their manufacturing location and customers is a continuing concern. In conclusion, the slowing speed of the global supply chain, the raising importance of saving working capital along with the nowadays crucial time to market and shipping time has changed the point of view of the companies on sacrificing all these factors to pursue labour cost reduction. In addition, as mentioned above, the labour cost raise in the more developed areas in China has forced the companies to move deeper inland in rural areas in order to maintain the labor cost advantage (Sirkin, 2011). The direct consequence is that the supply chain has become longer since the transportation infrastructure is weaker in these regions and the distance to both main airports and harbours is longer. Straight forward we can realize that coupling the slowing of the supply chain on land and on the sea forces companies to invest in working capital and to loose responsiveness.

2.5.3.6 Government Policies

After being elected to office for a second term, President Obama hosted a forum at the White House focused on the increasing number of companies choosing to “insource” jobs and make new investments in the United States (Tate et al., 2012). Ellram et al., (2013) reveals that in the survey dispensed for his work to 319 american firms, the
majority of the respondents agree that government policies will make certain regions more attractive in the next 3 years. The reference was to Government Trade Policies, including tax advantages, subsidies, and countertrade requirements. This directly relates to Dunning’s Strategic Asset Seeking Advantage. This factor increased the attractiveness of North America, South Asia, Central/Eastern Europe, and the Middle East (Ellram et al., 2013). Companies are also well aware that policies might be a risk factor. For example, while Government Trade Policies were viewed favourably, there was also significant perceived risk associated with them that hurt how attractive they were in North America (Ellram et al., 2013). Factors affecting a region’s attractiveness for the reshoring change significantly over time, with Government Trade policies increasingly considered as a differentiator (Ellram et al., 2013). There have been examples of strong initiatives by governments, for example in 2012 the US government administration announced several incentives to encourage home-shoring/insourcing (Tate et al. 2012). Based on such evidence, according to Fratocchi et al. (2014), we can assume that back- and near-shoring topic should be of great interest for policy makers of developed economies because of its potential to bring back home jobs (previously offshored). The significance of the policies in the firms’ strategic decision is assessed also by Contractor et al., (2010) Government policy changes, such as the liberalization of FDI regimes have reduced the barriers to foreign entry (UNCTAD, 2009). The tighter enforcement of intellectual property rights in many nations has reduced the fears of technology misappropriation and, at the margin, increased the propensity to outsource or share knowledge with alliance partners (Contractor and Lorange, 2002). The intensification of competition in many sectors has forced companies. Assessing on the reshoring phenomenon potential, Bailey and De Propris (2014) completed their analysis with a critique of British industrial policy with reference to reshoring, with reference to comparable policy experience in the US. Drawing on such findings, the paper argues for a government commitment that frames reshoring in a broader, longer term, pro-active pro-manufacturing industrial policy.

Bailey and De Propris (2014) assessed that, critically, access to finance remains a major issue for many firms in the automotive supply chain. In their analysis focused on the manufacturing in the UK they have concentrated also on the automotive which is one of the most important in Western Europe. As the authors stated the investments necessary to maintain and improve the plants that many British and foreign companies have established are now threatened by financial resources shortage. The authors clearly see the UK government as the only way to incentive investments, particularly with loans. On the same subject, The Smith Institute and the SMMT (2012) highlighted a ‘window of opportunity’ to expand outputs and create jobs in the automotive supply sector, but that access to finance remained a real problem which was effectively thwarting the realisation of such potential. Tooling up’ in the automotive supply chain
represented a particular challenge given the uncertainty over future vehicle volumes, the asset specificity of the tool (which means that lenders have been reluctant to accept it as collateral, and a lack of specialist knowledge in the baking system over how to evaluate proposals). In tackling such issues, the report calls for a ‘step change’ in the engagement of the UK financial sector with the automotive industry. Financial initiatives must be streamlined by the government, the authors note, a taskforce launched to look at finance for tooling up, and a move made towards more long-term policy arrangements to ensure sure finance is available. At some point a dedicated automotive (and manufacturing) loan fund—backed by the state—may be required to overcome failures in the financial system. On this, in mid-2014 the government launched a £24m National Tooling Fund to assist toolmakers and component manufacturers to fund the design, development and manufacturing of tools following a firm order from an OEM. Congruently with the author I believe that since the investments in the service market are quite different the policies to incentive backshoring of services should be focused on tax legislation than financial loans (see also Contractor et al., 2010).

More broadly, the work of the Council can be seen as a good example of how industrial policy can help firms and government deliver universal benefits. Such activities could usefully be extended, in both the auto case and other industries (for example, into the Marine Industries Leadership Council, the Industrial Biotechnology Leadership Forum or the Aerospace Business Leaders group), with such groups helping to identify key fractures in industry supply chains and how to address them. This is no longer about industrial policy ‘picking winners’, but rather helping the private sector identify weaknesses and then addressing them (Bailey and De Propris, 2014). The work of the Council is in line with how industrial policy design is conceived of in modern debates (see Rodrik, 2008), where policy ideally has the quality of ‘embedded autonomy’. It is not captured by firms and sectors, but focuses on the discovery process, where firms and the state learn about underlying costs and opportunities and engage in strategic coordination. In the context of reshoring possibilities for UK manufacturing, it might mean government working with industry to identify key fractures and gaps in the supply chain and how to address them. In this regard, there is an institutional and capacity failure inherent at the national level in terms of the lack of policy conviction and a lack of resources to design pro-manufacturing industrial policy interventions. More generally, Bailey and De Propris (2014) suggests that the UK could learn from policy initiatives in the US where the government has been active in encouraging US-based firms to relocate some activities back to the US. In 2012, President Obama created tax incentives that for example increased tax breaks for domestic production activities in advanced manufacturing, offered a 20% income tax credit to allow for the expenses of shifting operations back to the US, made permanent an expanded tax
credit scheme for R&D and removed tax breaks for firms offshoring manufacturing. The US government has also funded a ‘Reshoring Initiative’, including an online costs calculator, based on the premise that manufacturers able to calculate costs more fully are more likely to outsource to domestic firms rather than overseas (Merlin-Jones, 2012). The US experience also highlights some of the constraints and limits to reshoring. As noted above, manufacturing activities being reshored will require fewer, more highly skilled workers as manufacturing productivity grows. That presents a challenge in terms of raising skill levels in manufacturing. Furthermore, while reshoring may assist in terms of output growth it may not create large numbers of new jobs, as Wells Fargo Economics Group (2012) has highlighted in the US case. Possibilities for manufacturing reshoring in the UK and Europe may be more limited than in the US, as the BCG has concluded (Sirkin et al., 2012). In part this may be because the wage cost differential (adjusted for productivity) between Europe and China may not be close enough create a ‘tipping point’ in some sectors as in the US (Sirkin et al., 2011). But this still raises the issue of what policy can do to push the process along, and means recognising that smaller firms often followed larger firms in offshoring production as they wanted to be near their customers. So attracting them back means relocating not just individual firms but whole segments of the supply chain, and means support for smaller firms especially which face high costs when moving operations. While there have seen some welcome moves by the British government in encouraging the process, these have been small scale and often do not reach smaller firms in particular. A key lesson of Bailey and De Propris (2014) is that a much more concerted effort is needed part of a wider industrial policy that looks to build manufacturing capacity. That means one that stimulates investment in new technologies (for example through better capital allowances), that provides accessible finance for small- and medium-sized firms along the supply chain, that backs high growth firms and exporters, that encourages manufacturers to increase output and employment through tax breaks and that supports better skills formation. Overall, there appears to be an opportunity to rebuild some of the UK’s fractured manufacturing supply chains—particularly in the automotive case—given recent shifts in exchange rates, transport costs, rising wages overseas and heightened concerns over supply-chain resilience. At the end of their analysis analysing wider policy lessons Bailey and De Propris (2014) hope for wider policies from Uk Government and the key message from their paper is that the stimulation and attraction of investments is not going to happen on a significant scale without a “major policy effort”.

Finally, concerning manufacturing reshoring, Fratocchi et al. (2013) notes that the United Nations Conference on Trade and Development (UNCTAD) recognized the relevance of reshoring and nearshoring and their implications for policy-makers (UNCTAD). Kinkel (2014) observed, concordantly, that Policy makers are increasingly
aware of the so called back-shoring or re-shoring of once off-shored manufacturing capacities back to the home country and are acting with the intention to sustain the relocation actively.

2.5.3.7 Local market size and proximity

According to Stringfellow et al. (2007) the third factor in model is proximity to market (see also Hutzschneireuter et al., 2010). Jensen and Pedersen (2011) highlighted that the stronger the market-seeking strategic motive, the more advanced the offshored tasks. This fact, according to their study, involves higher difficulty in performing offshoring and lower success probability. The article by Demirbag and Glaister (2010) discusses how the pattern of location of R&D units abroad has significantly changed with the recent wave of offshoring. By locating a critical function in an important foreign market (and especially by designating it as a ‘global competence centre’ or giving it a ‘global mandate’) the firm earns legitimacy and reputation with local customers, opinion makers, and government. For example, several location decisions and ‘mandates’ in the biochemical sector have been driven by the realization that regulators and consumers in China, India, or Brazil will respond more favourably when the global firm is seen to perform.

According to this concept we can take a look again at the Vestas Technology example reported by Jensen and Pedersen (2011) quoted earlier on. Some Vestas Technology R&D research centers are also important assets in Vestas’ marketing and market access strategy. The research center in Singapore created a gateway to the increasingly important Chinese market. In the same vein the most recent research center in Houston, Texas, is closely related to the firm’s marketing strategy as it is expected to give Vestas a closer connection to one of the most prominent markets of the world for wind turbines. The above discussion suggests that the offshoring is seen as a market entry strategy and operational solution; not as an internal decision to better perform production itself. This is consistent with what was suggested previously asserting that recently offshoring has been often coupled with marketing and foreign markets entry strategies (Kotabe 1992, 2001; Kotabe et al. 2009; Kotabe and Murray 2004) and consumers feelings and opinions strategies (Thelen et al. 2011). Companies seems to have market entry and proximity aims along with the offshoring initiatives. This tendency will be investigate further in the empirical study.

2.5.3.8 Suggestions and proposition on geographical meaningfulness

Coherently with the above discussion, it is possible to highlight that the changes in all these host countries’ characteristics were different from a country to another. This suggest that every country has its own characteristics concerning economical, political and cultural (as will be explained further) situations. Fratocchi et al. (2013) noted that
the study of the back/reshoring processes are worth of being studied singularly for every host country, given the size and the industry of the firm (see also Ellram et al. (2013). The authors said that outcomes such as back/reshoring probability and surviving curve of the offshoring may change widely between host countries. All that took part in proposition 2 formulation that will be explained further.
2.6 An important and underestimated cause of costs: The cultural distance

The impact of culture on international business activities has long been of interest to scholars (see, among others, Gibson, 1999; Chui et al., 2002; Ralston et al., 2008). The impact of cultural has also been recognized as being very significant in relocation projects since, for examples, failures in service offshoring (causing back/reshoring) has also been partially connected to insufficient and ineffective cultural differences management, sometimes referred as bridging (Gray et al., 2013). One of the more important research frameworks in this area is that of Hofstede (1980, 1996, 2001). Hofstede worked out 4 cultural dimensions which are meant to measure cultural differences. These four primary factors are as follows:

1. Uncertainty avoidance (UAI): this dimension analyses the way a society’s members feel comfortable with uncertainty and ambiguity. It also refers to individuals’ search for Truth in case they are not tolerating ambiguity. This factor’s aim includes also indicate if and how people with a specific background culture are shaped by it to feel uncomfortable or comfortable in unstructured and ambiguous social situations. Examples of countries with high UAI are Japan, China and Greece. Countries with low UAI are, for instance, U.S. and India.

2. Power distance (PDI): the main thought behind PDI is that often in the power is distributed unequally. However, the interpretation of such a fact is very different depending on the culture. For less powerful members of the society’s institutions (family included) might be obvious to accept and even expect that power is distributed unequally in high PDI cultures such as Asian or Arabic countries (see Table 7).

3. Individualism/ collectivism (IDV): involves the extent to which individuals are used to interpret themselves as part of a whole society/group (high collectivism such as Asians) or, first of all, as singular being (Individualistic cultures such as Westerns). Being more specific, collectivistic societies are those in which the ties between individuals are tighter – members are expected to have high social responsibility putting the society’s importance above themselves and their families. On the other hand in a individualistic culture, as it is ours, people are expected to put their own interest and look after their families instead of protecting the higher good of the society.

4. Masculinity/ femininity (MAS): this forth dimension measures they in which the society has written or social rules for the distribution of power and roles between genders. Masculine societies are those in which precise distinction between gender defines roles and possible power distribution between gender. The more freedom there is concerning role selection the lower the MAS of the society (higher feminism).
Table 7: Cultural dimensions for selected countries (according to Stringfellow et al., 2007)

<table>
<thead>
<tr>
<th>Country</th>
<th>Collectivism</th>
<th>Power distance</th>
<th>Particularism</th>
<th>Polychronic time orientation</th>
<th>Communication style</th>
</tr>
</thead>
<tbody>
<tr>
<td>United States</td>
<td>Low</td>
<td>Low</td>
<td>Low</td>
<td>Low</td>
<td>Low context</td>
</tr>
<tr>
<td>Great Britain</td>
<td>Low</td>
<td>Low</td>
<td>Low</td>
<td>Low</td>
<td>Low context</td>
</tr>
<tr>
<td>Canada</td>
<td>Low</td>
<td>Low</td>
<td>Low</td>
<td>Low</td>
<td>Low context</td>
</tr>
<tr>
<td>Australia</td>
<td>Low</td>
<td>Low</td>
<td>Low</td>
<td>Low</td>
<td>Low context</td>
</tr>
<tr>
<td>Ireland</td>
<td>Low–medium</td>
<td>Low</td>
<td>Low</td>
<td>Low</td>
<td>Low context</td>
</tr>
<tr>
<td>Germany</td>
<td>Low–medium</td>
<td>Low</td>
<td>Low</td>
<td>Low</td>
<td>Low context</td>
</tr>
<tr>
<td>Czech Republic</td>
<td>Medium–high</td>
<td>High</td>
<td>Low</td>
<td>a</td>
<td>a</td>
</tr>
<tr>
<td>Mexico</td>
<td>Medium–high</td>
<td>High</td>
<td>Medium</td>
<td>High</td>
<td>High context</td>
</tr>
<tr>
<td>India</td>
<td>Medium</td>
<td>High</td>
<td>High</td>
<td>High</td>
<td>a</td>
</tr>
<tr>
<td>Philippines</td>
<td>Medium–high</td>
<td>High</td>
<td>a</td>
<td>High</td>
<td>High context</td>
</tr>
<tr>
<td>Malaysia</td>
<td>Medium–high</td>
<td>High</td>
<td>a</td>
<td>High</td>
<td>High context</td>
</tr>
<tr>
<td>China</td>
<td>High</td>
<td>High</td>
<td>High</td>
<td>a</td>
<td>High context</td>
</tr>
</tbody>
</table>

a: Unknown.


Later on Hofstede has also added a 5th dimension which is Time Orientation, meaning the importance and interpretation of the time spent in an activity given by different cultures, that will be discussed further in the text. Such cultural elements vary widely between countries. Coherently, Fratocchi et al. (2013) suggested that it might be interesting to question if the probability of back/reshoring changes from an host country to another, given the industry and size of the firm (see also Ellram et al., 2013).

Proposition 3: the success probability of an offshoring initiative changes depending on the host country, given size and industry of the firm. Meaning that the probability of back/reshoring is effected, fixed the other factors, from the specific host country by itself. Different country or region involves different effects.
Coming back to the business point of view, services offshoring is an accelerating trend. While the cost-savings from offshoring service work are usually clear, operating at a distance also brings with it certain “invisible costs” (Stringfellow et al., 2007; see also Gray et al., 2013). Although culture has been established as one of the determinants for MNEs when they enter foreign countries as explained by Hahn and Bunyaratavej (2009), culture has still been underexplored in offshoring of services, particularly from an empirical perspective. Theoretical perspectives on cultural distance in services offshoring typically indicate that decreased cultural distance will have beneficial effects (Stringfellow et al., 2007; Hahn and Bunyaratavej, 2009). In their paper Stringfellow et al. (2007) they examine the close coupling between offshoring decisions and service offerings and service delivery. The objective of such discussion is to highlight the implicit trade-off between cost and quality that every firm has to make. Building on the existing service operations management literature and incorporating the findings from cross-cultural, communication and manufacturing offshoring studies, we develop a framework for service offshoring. As said earlier, the conceptual model shown in figure 1 and 2, adapted from Stringfellow et al. (2007) is intended to serve as a starting point for more in-depth research.

2.6.1 Interaction intensity

As stated by Stringfellow et al. (2007), the service operations management literature could be viewed as starting with Chase’s seminal work on customer contact (1981). There are two basic categories of customer contact: face-to-face contact and non-face-to-face contact. Face-to-face contact requires customers to be physically present in order for service providers to perform the service. As noted by (Bessom and Jackson, 1975) the common understanding of services activities identify them are processes that generally need to be performed close to customers with face-to-face contact. Having a haircut is a simple example. Non-face-to-face contact can be viewed as communication technology-mediated contact, developed by new technologies enabling the offshoring process thanks to technological support. The medium may be telephone dialogue, teleconference, Internet, e-mail or regular mail correspondence. Offshoring generally deals with services with communication technology-mediated contact. Coherently Bardhan and Kroll (2003) explained that services subject to offshoring have specific characteristics such as a lack of a face-to-face customer services requirement, high information content, technological mediation. Interaction intensity, the degree to which customers interact with service providers, is largely determined by service content/offerings and service processes (also called service production processes and service delivery processes). For some services, service offerings and service processes cannot be physically separated while for other services,
it is possible to distinguish between service offers (e.g. burgers) and the service process (how service providers cook the burger—the production process, and how they deliver the burger—the delivery process). For clarity of presentation, each factor will be discussed separately.

Assurance derives from service representatives’ capability to transmit trust and their expertise, knowledge and kindness when performing the service. Effective courtesy and kindness is important but it my differs from perceived courtesy and kindness (Stringfellow et al., 2007). The perceived courtesy felt by the customer derives from the tone of voice and politeness expressed by the provider during the communication. Generally speaking, the tone of voice refers to the way the words are pronounced while politeness relates to the extent of which certain words as “please”, “thank you” and “you are welcome” are said. In addition to that, cultural distance implies that courtesy may be interpreted differently along cultures. Certain words may sound polite in a specific culture while being perceived rude and impolite in a different culture. For this reason Stringfellow et al. asserted that it is mandatory for offshore service providers to adequate their way of speaking to the customer’s culture and social norms for communication (2007). Moreover, assurance in service quality also requires trust to be inspired in the client. the wider the difference in power distance level between the service representative and the client, the harder to inspire trust in the customer (Stringfellow et al., 2007). Stringfellow et al. provide an example to clarify this point, if the customer comes from a low power distance culture (US, UK or Western Europe in particular), he/she might interpret the behaviour of a service provider from a high power distance culture as submissive. This may lead him/her to presume a lack of knowledge or skills in the provider, compromising the perceived quality of the service. As it was explored earlier, while persons from high power distance cultures (such as India as revealed by Lewis, 2002) tend to avoid conflict seeking a settlement through an intermediary or third party, low power distance cultures usually face up conflicts in order to solve them (Stitt, 2002). Furthermore, time orientation is responsible for affecting the responsiveness perception of the customer. In the case that the difference in time orientation between client and service provider is wide, the urgency needed may be interpreted differently leading (in worst scenario) the service representative to not satisfy the hurry for a solution needed by the customer. This might happen because the provider may not realize the urgency due to difference in monochronicity-polychronicity. Customer’s tendency to accept a long waiting to get the solution might be more acceptable in a polychromic country (India) while it may generate frustration in client from monochromic countries such the US. An additional point concerns empathy, which in this case refers to provider’s ability to understand the feelings and emotions of the customers. This
capability contributes to the perception of being treated with care and specific attention in the client. Cultural distance may impact the ability of the service representative to establish empathy with the customers because, as stated by Stringfellow et al. (2007), it is much more complicated to develop empathy with a person that the provider perceives as culturally different. In order to make the customer feel more comfortable and to make him/her perceive individualized attention, it is crucial for the service representative to recognize and understand customer’s peculiar needs during the interaction; clearly that is less likely to happen is the provider is not familiar with customer’s culture (because implicit signals or indirect message contents may not be recognized or interpreted by the service provider). The above discussion proposes that service quality is negatively influenced by cultural distance. Accordingly, Stringfellow et al. (2007) stated that customer service quality is affected by customers’ home country culture and service offshore location cultural distance. The deterioration of service quality will be greater in case of cultures that are more different from each other. “A bigger consequence of the deterioration of service quality is the back/re-shoring process that might be necessary due to huge lack in service quality compared to the expected output when the offshoring was evaluated” (Stringfellow et al., 2007). Coherently, scholars’ studies on cultural distance effects on services offshoring generally predict beneficial results in case of reduction in cultural distance between host and home country (Kliem, 2004; Kedia and Lahiri, 2007).

Proposition 4: the bigger the cultural distance, the more likely the company will have to back/reshore the activity (mainly due to service quality deterioration).

The previous debate formalized few hypothesis according to which interaction intensity and interaction distance might be causes of invisible costs rise in service offshoring initiatives (concerning both customer-service provider interactions and communications among team colleagues of the service provider firm). In words of Stringfellow et al. (2007), the effect of the interaction distance may result in a wide range of significance. That is, as the authors stated, because the interaction intensity can, de facto, amplify the negative influence of the interaction distance on the invisible costs. The aim is to suggest that services with high interaction intensity are more significantly affected by invisible costs due to interaction distance or cultural distance. More in detail, since different services and industries have different interaction intensity between colleagues or between customer-service provider eventual cultural or interaction distances may have different effects generating high invisible costs or, on the other extreme of the continuum, non generating invisible costs at all. For instance, a call center (or other type of customer support offices as well as internal business development projects) are more likely to be affected by interaction distances
while low interaction services (such as payroll and benefits internal administration. Hahn and Bunyaratavej (2009, pag. 2) asserted a very similar concept noting that, since in many B2C services providers interact directly with end consumers but in many other cases (among B2C, B2B and internal services) services are not always provided to end users, the effects on “cultural misalignment” can differ in their consequences and proportions depending on the industry and specific service.

Proposition 5: High interaction distance industries (or services) are more likely to be affected by cultural distance negative effects on the overall offshoring project, making back/reshoring more likely to be performed (meaning the “failure” of the offshoring initiative).

2.6.2 Service content/offering

Service content is “what” clients are offered from service companies or “what” the office is supposed to deliver to the parent company (paycheck management, controlling reports and services, after-sale support to customer, etc.). The output can be tangible (hamburger, income tax form, report) or intangible (feeling good after a counselling session). It is critical that the service offering is well defined from the service providers’ perspective because, if it is so and the customers understand and agree on the service specifications, interaction between customers and service providers can be conducted with minimal and programmable dialogues since the interaction intensity is low by definition. In order to be more precise Stringfellow et al. (2007) provides an example that is the fact that the research of the service facility’s location can be answered through a FAQ list posted on the Web. If the service offering is well defined from the service providers’ perspectives, but customers are not aligned and perfectly aware of the service specifications defined by service firms and/or customers’ expectation on service offerings are somehow different, interaction intensity has increased. In this case, in order to guarantee a good service level and customers’ satisfaction service providers have to face a potential perception difference. To compensate such a lack of alignment and perception service companies have to apply a combination of scripts and open questions. Stringfellow et al. (2007) noted that IT technicians are often facing situations in which customers are reporting that their laptops are not working without being able to describe the issue or articulate in case the technicians seeks clarifications. Such interaction requires service providers to have great knowledge of the field/device and make the right questions to recognize the problem. When neither service providers nor customers are able to fully indicate service offerings from their perspective (the required and available ones) the extreme
scenario occurs. Examples of these cases are complex IT projects, rare medical cases, new service development, first technology implementations, etc. Experience, intuition and expert knowledge play the decisive part since no script can be used to solve the problem. Needless to say, this scenario represents the eventuality of highly intensive interaction between service customers and providers. Table 8 presents a summary of the above discussion reflecting Stringfellow et al. (2007, pag. 5) postulate that is “interaction intensity is influenced by service offerings.

Table 8: Categories of service offerings and their impact on interaction intensity

<table>
<thead>
<tr>
<th>Service providers’ perspectives</th>
<th>Customers’ perspectives</th>
</tr>
</thead>
<tbody>
<tr>
<td>Well defined</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Interaction intensity low</td>
</tr>
<tr>
<td></td>
<td>• Simple scripts with closed questions</td>
</tr>
<tr>
<td></td>
<td>• Basic knowledge</td>
</tr>
<tr>
<td>Ill-defined</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Interaction intensity medium</td>
</tr>
<tr>
<td></td>
<td>• Some scripts with open-ended questions</td>
</tr>
<tr>
<td></td>
<td>• Significant depth of knowledge</td>
</tr>
<tr>
<td></td>
<td>• Articulation</td>
</tr>
<tr>
<td>Well defined</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Interaction intensity medium</td>
</tr>
<tr>
<td></td>
<td>• Some scripts with open-ended questions</td>
</tr>
<tr>
<td></td>
<td>• Significant depth of knowledge</td>
</tr>
<tr>
<td></td>
<td>• Flexibility and adaptability</td>
</tr>
</tbody>
</table>

2.6.3 Service process

Service processes comprehends the service creation (service production/performing process) and service delivery process to the final consumer (internal to the company or external in the B2C). The service process related decisions consist in a key decision moment in the service industry, that is because the decisions taken at operations management level impact in not only on operations strategy and service quality but also at operational-level. The operational level involves choices concerning capacity, inventory, layout, to scheduling (Fitzsimmons and Fitzsimmons, 2004). Due to the very
unique genesis of services the service production process and delivery process may refer to the same actual operational moment when both processes occur simultaneously and cannot be separated. Those cases reflect distinctive characteristic of the processes that have between their 4 main factors perishability and simultaneity meaning that they cannot be stored and saved for future use but also that are being produced, delivered and consumed simultaneously (Hahn and Bunyaratavej, 2009).

In the Japanese-style restaurants chain Benihana, pioneer for many aspects in the restaurants chains business in the U.S., the chef cooks in front of the customers, delivering the food and the experience coupled with an entertaining flair; a preparation process that goes way beyond the simple service creation of the food involving an emotional experience (Stringfellow et al., 2007). In order to describe the main characteristics of service processes Shostack (1987) summarized the basic characteristics in common between service processes into three points in common between operations management, industrial engineering, decision theory and, succinctly summarizes three about the service process.

1. Standardization: according to operations management and industrial engineering approach, every service process can be split into logical sequences and steps to simplify its control and analysis;

2. Need for judgment: outcomes may differ as a result of judgment, chance or choice of sequence inherent in the process (decision theory);

3. Interdependence: from IT literature on processes derives that a process is a real time phenomenon with deviations and tolerance typical of any punctual observation that, statistically differs from standard situations and will never perfectly match any characterization or model.

The main features of processes have then been summarized into three essential characteristics. Thanks to Shostack (1987) the service processes can be describe within three dimension coming from his basic characteristic, as summarized in Table 9. These three dimensions will now be described separately.

The cultural differences between the home country of a MNC and the market that they intend to enter that drives the decision (Hennart and Larimo, 1998). In general, in case the firm aiming to offshore is native of a country with very different culture it will more likely prefer to enter the new market with shared equity partners or FDI (captive market entry mode) in order to have better control over local affiliate, offices or branches (Gales, 2008). Such suggestion is apparently in contradiction with Kogut and Singh (1988) and Kim and Hwang (1992) that noted, in their studies on manufacturing offshoring cases, that companies tend to apply entry modes which afford low control in high cultural distance situations. The difference between the two findings is motivated by the deep difference between the service industry studied by Erramilli
and Rao (1993) and the manufactory industry analysed by Kogut and Singh (1988) and Kim and Hwang (1992). This discussion lead to the next hypothesis.

Proposition 6: the cultural distance between the home country of the offshoring company and the target market culture is a main factor in the decision process concerning the entry mode (the main choices, as explained earlier in the paper, are full ownership, joint ventures and outsourcing).

2.6.3.1 Interaction intensity and invisible costs

To quickly recap the interaction intensity conclusions previously analyses, in case the service provider is not able to precisely define the service offering specification and neither can the customer the overall quality of the service is likely to be negatively affected because of interaction intensity. Concerning service quality Stringfellow et al. (2007) suggested two main dimensions to be measured which are service reliability (which is the ability to execute the service activity in a reliable and accurate manner) and assurance (service representative’s competence, expertise and politeness and their ability to entrust and inspire confidence in the customer); both are likely to be compromised due to interaction intensity increase. To repair the impact of the interaction intensity the service providers have to make massive use of communication and need to have the proper skills articulate, to describe and finally communicate the offering to prospective customers. In the same way customers might incur into similar difficulties to define their precise needs. The consequence is that communications, equivocations and misunderstandings happen frequently. Stringfellow et al. (2007) also noted that interaction intensity indirectly effects service quality perception because when customer is not able to define his complex needs the service representative may perform a not fully satisfying service inducing the customers to perceive lack of product competence and expertise. This perceived low service quality may cost potential sales which clearly a dangerous hidden cost. Furthermore, potential customer’s perception of incapacity to interpret customers’ needs induces frustration in the customers causing hidden costs for frustrated customers to the firm. Service quality, in terms of reliability and assurance, is particularly under pressure when the service process is not standardized, involves tricky judgment and reciprocal interdependence among activities and sequences; this happens due to very high interaction intensity. In addiction to this, the quality level is very difficult to be maintained at the same level when performing many times not standardised processes. Such lack of constancy may lead customers to question providers’ expertise and skills. Coherently, Stringfellow et al. (2007) asserted that services’ interaction intensity affects invisible costs. The greater the interaction intensity, the greater its effect on invisible costs.
2.6.3.2 *Interaction distance and invisible costs*

Table 11 summarizes few examples, given by Stringfellow *et al.* (2007), to clarify how the three components of interaction distance are influenced by invisible costs proposed by Stringfellow *et al.* (2007). Below the discussion these three components interaction with invisible costs will be showed.

2.6.3.2.1 *Geographic distance and invisible costs*

Geographic distance affects service quality particularly due to time-zone difference. In order to provide the service at convenient working-hours in customers’ home country, the service representatives are needed to operate outside normal working hours to compensate the time difference. Therefore, employee job satisfaction is particularly low in these cases since working during abnormal shifts (Stringfellow *et al.*, 2007). Accordingly Zedeck *et al.* research has showed empirical results confirming such intuition concerning low job satisfaction for employee forced to perform in weird hours to assure service to geographically distant customers (1983). Schneider and Bowen has also concluded that lower job satisfaction of service providers causes a decrease in customer service (1995). This discussion suggests that quality service offered to customers is deteriorated if the offshore service representatives are located in distant time zones, leading to the following statement by Stringfellow *et al.* (2007): customer service quality is negatively influenced by the time zone difference of an offshore service location. The greater the time zone difference, the greater the negative effect on customer service quality.
### Table 9: Impact of interaction distance on offshore services by Stringfellow et al. (2007)

<table>
<thead>
<tr>
<th>Impact on invisible costs</th>
<th>Temporal distance</th>
<th>Language distance</th>
<th>Cultural distance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Travel time</td>
<td></td>
<td>Accent intelligibility</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Accent as identity</td>
<td>Communication style</td>
</tr>
<tr>
<td>Time zones</td>
<td></td>
<td></td>
<td>Individualism/collectivism</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Power distance</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Monochronic/polychromatic time orientation</td>
</tr>
<tr>
<td>Ineffective communication in situations requiring reciprocal interdependence among service providers</td>
<td>Ineffective communication among service providers. Service provider dissatisfaction with “unsocial” working hours leading to high turnover rate</td>
<td>Inefficiency and customer dissatisfaction in ill-defined service offerings, with non-standardized processes</td>
<td>Inefficiency and customer dissatisfaction in ill-defined service offerings, with non-standardized processes</td>
</tr>
<tr>
<td></td>
<td></td>
<td>General customer dissatisfaction at dealing with foreign service providers.</td>
<td>Reluctance to resolve conflict leading to customer impatience and dissatisfaction</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Service provider lack of confidence reducing customer assurance with service</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Slow service leading to customer impatience. Different understanding of deadlines</td>
</tr>
</tbody>
</table>
3. Empirical analysis

3.1 Sample: the ORN database

The Offshoring Research Network (ORN) is an ongoing multi-year international project tracking the offshoring of administrative and technical work by companies in the US and Europe since the project’s launch in 2004 (e.g., Heijmen et al. 2009). In contrast to other data sets, it allows offshoring initiatives to be analysed at singular project level of detail since every company’s project is studied as an individual entity (multiple observations per firm) so that the level of detail is at individual offshore projects, rather than at a more aggregate firm or industry levels. The data are collected in the context of the ORN project on offshoring of technical and administrative work, from call centers and customer support offices to account payable administration through various support functions. The ORN project started in 2004 launched by Duke University’s Center for International Business Education and Research (CIBER), administrated by the Fuqua School of Business. During the first years on the project (2004 and 2005) ORN focused on surveying the offshoring practices of US companies. Later, from 2006, the online survey was extended to European firms thank to the involvement of many partners among European universities (see Table 1 for an overview of the main partners). Such partnerships led the ORN survey to spread since EU universities administered the questionnaire to companies in their own countries to participate in the survey. Furthermore, case studies were conducted on European companies too. At the core of the ORN project is the contextual commonality of the survey, the centralized online administration of the survey (in native business language of a country where necessary) each year; in this way all partners contribute to data gathering in their home countries, administering a common online questionnaire and thus contributing to the development of a common database. The survey enables tracking of the evolution of offshoring practices involving seven main areas comprehensive of: the functions being offshored; location decisions for the relocation, governance model (Captive, third party, Joint Ventures), strategic drivers of offshoring (allowing the understanding of companies main drivers towards relocation), perceived risks, performance metrics (deeply related to the decision drivers) and future, 18-36 months onwards, offshoring plans such as relocation in another foreign country (reshoring) or repatriation of the function (backshoring). As specified earlier, the unique characteristic of the ORN survey is its focus on surveying the specific offshore project implementations rather than companies’ general experience with offshoring. In practice, this means that every specific function that a company (sometimes involving multiple respondents from same company) has offshored in a particular location is identified by the year it was launched, and is treated as a separate observation. In this way the survey design results in a very fine-grained database that enables an analysis of offshoring dynamics across various administrative and technical functions located in
a wide range of countries or regions of the world, across industries, and across types of delivery model (captive, third party or hybrid). Finally, the ORN database includes both companies that already offshore and companies that have considered offshoring but have not yet initiated the offshoring of any function, this second group of firms was not subject of this study since there is no chance to perceive the study of the hypothetical revision of the relocation decision with back/reshoring for companies that have not offshored in the first place.

Table 10: ORN main partners.

<table>
<thead>
<tr>
<th>University/School</th>
<th>Country</th>
</tr>
</thead>
<tbody>
<tr>
<td>Copenhagen Business School</td>
<td>Denmark</td>
</tr>
<tr>
<td>Duke University, The Fuqua School of Business</td>
<td>United States</td>
</tr>
<tr>
<td>EMLYON Business School</td>
<td>France</td>
</tr>
<tr>
<td>Kyung Hee University</td>
<td>South Korea</td>
</tr>
<tr>
<td>Rotterdam School of Management</td>
<td>Netherlands</td>
</tr>
<tr>
<td>Solvay Brussels School (ULB)</td>
<td>Belgium</td>
</tr>
<tr>
<td>University of Manchester</td>
<td>United Kingdom</td>
</tr>
<tr>
<td>University of Navarra</td>
<td>Spain</td>
</tr>
<tr>
<td>University of Newcastle ; University of Western Sydney</td>
<td>Australia</td>
</tr>
<tr>
<td>Otto Beisheim School of Management</td>
<td>Germany</td>
</tr>
<tr>
<td>University of Tokyo</td>
<td>Japan</td>
</tr>
<tr>
<td>Otto Beisheim School of Management</td>
<td>Germany</td>
</tr>
<tr>
<td>Politecnico di Milano</td>
<td>Italy</td>
</tr>
</tbody>
</table>

This work paper uses data from the 2011 release of the DB of ORN annual surveys Offshoring Research Network (ORN) survey (offshoring.fuqua.duke.edu, see also Lewin et al., 2009). The database comprises 1845 companies and 5619 different offshore implementations, most already operating and some in preparation at the time of the
survey. Launch dates of offshore implementations range from 1964 to 2014. The sample comprises both large and small companies operating in various industries (see the following descriptive tables). Median company employment is 1750 employees, and the average company employment is 22,691 employees. The data comprehend, as specified, 5619 observation of 527 variables, a wide part of which are of categorical-qualitative nature and that has made necessary to use alternative methods. From a practical point of view, in fact, the problem was the numerous categorical variables, which request a different analysis and thought behind the analysis which differs from numerical/quantitative variables. Many of these categorical variables were derived from Likert scales used in the surveys. The Likert are, in fact, often used in sociological analysis as well as in survey of different purposes. The analysis of the Likert has been indeed one of the most critical part of the statistical analysis of the ORN DB. Within the 5619 offshored functions at disposal, however, only a subset of them was usable for the purpose of this study. In fact, a reduction in the number of available observations has been performed to guarantee the absence of missing values in the variables that are relevant for our purposes, in particular location characteristics, governance model and offshoring performance, which brings the sample size depending on the specific analysis being performed and the involved variables. It can be observed that the majority of firms are headquartered in the US (due to the genesis of the ORN project) and the offshoring destinations are mostly emerging countries (Tables 14).

Figure 3: Geographical locations involved in the ORN project (host locations in blue and home regions highlighted in red). The following representation has been obtained using the host and home country data in the ORN database, 2011 release.
The ORN survey analyses both manufacturing and services firm and, regardless of the industry, studies the offshoring projects regarding service and staff functions. To be noticed, that from the data it is possible to understand the growing importance of the service industry in the offshoring projects share. The analysis of the ORN survey classifies the offshoring firm industry into 10 main functional categories (see Table 4): Finance, Banking, Insurance (finance, accounting, banking, insurance services, legal services, and other back office activities); Retail and Consumer Goods; IT (information-technology-related activities); Aerospace and Defence; Biotech, Pharmaceutical, Chemical, Manufacturing and Automotive, Telecommunications, Professional Services, Transportation and Logistics, Energy, Utilities and Mining, Others. IT applications were among the earliest to be offshored (Lewin et al., 2009), and account for the second highest share of implementations in the sample (14%). The biggest portion of the sample (19.50%) consists of Professional Services companies, followed by Finance, Banking and Insurance. That is significant because the 37.40% of the projects was implemented by service companies, meaning that such firm are nowadays playing a role in the relocation which is not less important than the manufacturing, even though manufacturing enterprise were the first to relocate abroad, de facto, giving birth to the offshoring phenomenon (see, among others, Schmeisser, 2013 and Larsen et al., 2013) and that are still implementing a huge fraction of offshoring projects.

<table>
<thead>
<tr>
<th>Company size</th>
<th>Freq.</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Small (&lt;500)</td>
<td>1566</td>
<td>25.8%</td>
</tr>
<tr>
<td>Medium (&gt;500; &lt;20,000)</td>
<td>1801</td>
<td>32.1%</td>
</tr>
<tr>
<td>Large (&gt;20,000)</td>
<td>2109</td>
<td>39.7%</td>
</tr>
<tr>
<td>ND</td>
<td>143</td>
<td>2.5%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>5619</td>
<td>100%</td>
</tr>
</tbody>
</table>

Table 11: Company size, american classification (number of employees)
Table 12: Industry frequencies in the ORN database.

<table>
<thead>
<tr>
<th>Industry</th>
<th>Freq.</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Professional Services</td>
<td>1090</td>
<td>19,50%</td>
</tr>
<tr>
<td>Finance, Banking, Insurance</td>
<td>1001</td>
<td>17,90%</td>
</tr>
<tr>
<td>IT</td>
<td>790</td>
<td>14,13%</td>
</tr>
<tr>
<td>Manufacturing and Automotive</td>
<td>702</td>
<td>12,56%</td>
</tr>
<tr>
<td>Others</td>
<td>595</td>
<td>10,64%</td>
</tr>
<tr>
<td>Telecommunications</td>
<td>400</td>
<td>7,15%</td>
</tr>
<tr>
<td>Retail and Consumer Goods</td>
<td>295</td>
<td>5,28%</td>
</tr>
<tr>
<td>Biotech, Pharmaceutical, Chemical</td>
<td>221</td>
<td>3,95%</td>
</tr>
<tr>
<td>Transportation and Logistics</td>
<td>211</td>
<td>3,77%</td>
</tr>
<tr>
<td>Energy, Utilities and Mining</td>
<td>176</td>
<td>3,15%</td>
</tr>
<tr>
<td>Aerospace and Defence</td>
<td>110</td>
<td>1,97%</td>
</tr>
<tr>
<td>ND</td>
<td>28</td>
<td>≈0%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>5619</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

In the below table (table 14) the number of offshoring initiative directed to each host region is represented, the purpose was to identify the most attractive regions. First of all it is possible to see that India is the region that has attracted the highest number of initiatives by a wide margin. This may be a direct consequence of the positive service and quality reputation of India, which continues to be the most preferred offshore
location (particularly regarding IT; see Henley, 2006). Furthermore, East Europe occupies the second position and hosted a similar number of relocations as Asian regions (such as Philippines, Thailand, Taiwan, Hong Kong, Malaysia, etc.), China (which is treated separately from other Asian countries due to its specific regulations and overall significance in the sample), Latin countries (Mexico, Brazil, etc.) and West Europe.

Table 13: Host region frequency in ORN database

<table>
<thead>
<tr>
<th>&quot;Host&quot; region</th>
<th>Functions and BU relocated</th>
</tr>
</thead>
<tbody>
<tr>
<td>India</td>
<td>634</td>
</tr>
<tr>
<td>East Europe</td>
<td>237</td>
</tr>
<tr>
<td>Asia</td>
<td>214</td>
</tr>
<tr>
<td>China</td>
<td>202</td>
</tr>
<tr>
<td>Latin</td>
<td>197</td>
</tr>
<tr>
<td>West Europe</td>
<td>173</td>
</tr>
<tr>
<td>US</td>
<td>97</td>
</tr>
<tr>
<td>Africa</td>
<td>53</td>
</tr>
<tr>
<td>Australia</td>
<td>34</td>
</tr>
<tr>
<td>Middle East</td>
<td>32</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>1040</strong></td>
</tr>
</tbody>
</table>

Table 15 represents the regions that were chosen for different functions being relocated. What clearly emerges from this table is that there are precise regions in which companies tend to offshore singular type of functions. The administrative functions (Administration, taxation, accounting) are preferably offshored in Asia (please note that, tax wise, the Asia region comprehend tax advantageous locations such as Hong Kong and Singapore), India and West Europe (probably mainly due to West Europe companies). The back offices and call center are 100% relocated in India, probably the leadership of India does not surprise but the utter absence of relocations directed elsewhere does probably show that companies are influencing each other (acceptance) and that there a favourable environment which attracts those firms. Data entry and transaction processes are also mainly move to India with an important (29%) contribution of Asia. Manufacturing related support functions were relocated significantly in many regions, probably due to the presence, in loco, of previously relocated manufacturing plants. Operations related support functions were 100% moved to India. Software related business units were distributed 50% in Asia and the
other half split between India and Latin countries. Technical support and services were relocated to mainly in India (50%) and Asia (33%) with a consistent contribution from East Europe and Latin regions (8% each). Finally, textile related support units were relocated to Africa and China (67% and 33%, respectively) probably related to previous manufacturing offshoring initiatives.

Table 14: Functions relocation frequencies in different host regions (Australia, Middle East and U.S. were removed since had no observations)

<table>
<thead>
<tr>
<th>Function/ Host region</th>
<th>Africa</th>
<th>Asia</th>
<th>China</th>
<th>East</th>
<th>India</th>
<th>Latin</th>
<th>West</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Administration, tax, accounting</td>
<td>0%</td>
<td>35%</td>
<td>6%</td>
<td>0%</td>
<td>24%</td>
<td>12%</td>
<td>24%</td>
<td>100%</td>
</tr>
<tr>
<td>Back office function &amp; processes</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>100%</td>
<td>0%</td>
<td>0%</td>
<td>100%</td>
</tr>
<tr>
<td>Data Entry, Transaction Processing</td>
<td>0%</td>
<td>29%</td>
<td>0%</td>
<td>0%</td>
<td>71%</td>
<td>0%</td>
<td>0%</td>
<td>100%</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>13%</td>
<td>13%</td>
<td>31%</td>
<td>13%</td>
<td>25%</td>
<td>0%</td>
<td>6%</td>
<td>100%</td>
</tr>
<tr>
<td>Operations captive</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>100%</td>
<td>0%</td>
<td>0%</td>
<td>100%</td>
</tr>
<tr>
<td>Software</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>50%</td>
<td>25%</td>
<td>25%</td>
<td>0%</td>
<td>100%</td>
</tr>
<tr>
<td>Technical support and services</td>
<td>0%</td>
<td>33%</td>
<td>0%</td>
<td>8%</td>
<td>50%</td>
<td>8%</td>
<td>0%</td>
<td>100%</td>
</tr>
<tr>
<td>Textile production</td>
<td>67%</td>
<td>0%</td>
<td>33%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>100%</td>
</tr>
</tbody>
</table>
3.2 Methodology
After the initial overview of the database, the studies related to a better understanding of back/reshoring will now be explained. The variables used to investigate the phenomenon and, in particular, the hypothesis are obtained from the following questions and others:

- **Location drivers:** “Why was this particular location chosen?” (Likert scale from 1—strongly disagree to 5—strongly agree, 10 items).
- **Performance:** “To what extent do you agree that offshoring has measurably led to the following outcomes?” (Likert scale from 1—strongly disagree to 5—strongly agree, 8 items).
- **Governance Model:** “What is the service delivery model currently used for this offshoring implementation?” (0—Captive: fully owned offshore subsidiary; 1—Outsourcing: third-party service provider at the offshore location).
- **Savings expected and savings achieved:** the purpose is to capture qualitative indication of expectation in terms of savings (particularly in labour costs) that companies expected during the decision process on whether to offshore and where.
- **Future plans:** company representatives were also asked about future intentions. The questions regarded if the firms intended to maintain the offshore function abroad and, perhaps, to enlarge it or if the company was prone to relocate again the function in another country (reshore) or home country instead (backshoring).
3.3 Exploratory Analysis

3.3.1 Where was the focus on?

The theoretical approach was to better understand the offshoring processes to deep dive the characteristics of the back/reshoring caused by it. A more precise characterization of the offshoring processes, the decision processes behind it, the weaknesses and cause of failure will allow a better understanding of what the back/reshoring really is and what it is caused from. The focus on such a wide database was on:

1. Decision process of an offshoring project. Studying the drivers that push firms to relocate their BU in different countries, this study meant to link the origin of an offshoring process with his outcomes (data available in the DB) to understand what can cause the firm to be not satisfied or, generally, to be willing to back/reshore the activity. The location decision was also studied very deeply. The process throughout which the offshoring company is deciding the host country in which to offshore (related to the whole decision process regarding the offshoring and strictly connected to the eventually of a subsequent back/reshoring, see hypothesis 3).

2. Cultural differences (quantified in a variable named “cultural distance” in the DB which corresponds to the interaction distance explained in 2.3 and 2.4 paragraphs), related to hypothesis 2, 4, 5 and 6. The analysis will highlight how and when the cultural distance between home and host country is taken into account and in what magnitude it influences the decision process about an offshoring project. Furthermore, different analysis will try to discover if and how the cultural distance influences the results of an offshoring process and, consequently, how important it is a cause and potential origin of a back/reshoring choice.

3. Implementation mode (often called “entry mode”) which is the strategical decision of the choice of the most effective approach in the entrance in the host country (related to hypothesis 4). The entry modes available can be sum up in 3 groups:
   - Outsourcing (to local supplier, to domestic supplier from the “home” country and to an international supplier)
   - Captive
   - Joint-venture

How do these 3 factors determine the probability of an offshoring initiative to be converted with a back/reshoring process? This probability may also be named as “success probability” if the first school of thought (described in 2.2.2 paragraph) which sees the backshoring as the consequence of the failure of
some offshoring initiatives is adopted (see, among others, Müller, 1996; Borgmann et al., 2000; Schulte, 2002; Aron & Singh, 2005; Leibl et al., 2009; Larsen et al., 2011; Stringfellow et al., 2007 and Fratocchi et al., 2013). “Success probability” means, in this case, the probability to not back/reshore, the assumption is that such fact expresses the positive and satisfactory outcome of the offshoring project.

4. Future intentions of the firms. What if the opinion of the companies about the offshoring and future intentions are analysed with the survey instead of evaluating the outcomes through savings achieved or efficiency as proxy for the success of the offshoring? The variables plan_lockback and plan_reloc are collecting these information in the DB. In these variable’s content companies were pronouncing themselves directly on their future intentions and particularly on whether to move all assets to another foreign country, which means change the location without giving up the offshoring as in the case of nearshoring or, more generally, reshoring. Another example might be the possibility to repatriate assets and functions delocalized (backshoring). Please note that these variables have been studied after a preliminary data cleaning, particularly removing the data from two surveys (UK2007 and Scandinavia 2007) that contained some discrepancies.

How do these variables influence the outcome savings or the efficiency achieved by the foreign branch? How do the specific host country or the entry mode influence the savings that the company should expect when offshoring (see hypothesis 4)? Since cost savings still the most important driver I used the savings as a good proxy for the success/satisfaction of the company.
3.4 Likert scales analysis: factorial data.

In order to understand how an offshoring project is performed and how it can derive into a back/reshoring project, the survey data in the DB were used. Many direct and explicit questions in the survey were using Likert scales. An initial analysis was then performed on such data to understand their origin and to be more conscious of the meaning that every answer has, to capture every facets of how offshoring can origin back/reshoring. Often in survey Likert scales are used and ORN is no exception. These scales were born from sociological analysis and they are commonly used to study the attitude with respect to a precise topic. Throughout a series of statements and questions the interviewee is asked to take a position with respect to a subject or statement. The attitude of the respondent is expressed with the Likert scale which is, usually, built with 5 or 7 levels of attitude (but the number of levels might be different without changing their relation with the below discussion).

In the ORN database there are 3 main type of variables built with Likert scales, below the scales are described:

1. Location: variables that try to catch the motivations which pull companies to choose a particular country as “host” for the offshoring. The survey question used to investigate such factor were: “was the x driver important in the location choice?”. The analysis of these data allowed to understand the choice of the host country and, then, to the mistakes or bad practices that may concur to generate future back/reshoring projects.

   ![Likert Scale Diagram]

2. Driver: variables that try to catch the motivations that pull companies to offshore. They are trying to present possible drivers (such as efficiency, labour cost, qualified personnel shortage, etc.) collecting companies feedback on the importance of these factors as drivers towards the offshoring. The respondents were asked if the specific driver (selected in the survey building process) was considered important and to grade such importance from 1 to 5. Highlighting what drives firms during an offshoring process allowed to understand were the focus was not directed or not sufficiently deepened. The underestimation of
certain factors and/or completely ignoring other aspects may take an important role as cause of unsatisfactory offshoring results and ultimately causing back/reshoring.

3. Outcomes: self-assessment of the companies regarding specific results and outcomes of the offshoring initiative. The firms’ interviewee were asked to grade their level of agreement with sentences asserting the achieving of certain outcomes throughout the offshoring. Analysing such factors allowed to understand with which KPIs a relocation is evaluated and which outcomes are most important to the firms. Understanding such evaluation process highlighted were companies focus and in which area the results are, generally, critically low.

The Likert scales are ordinal, that is the levels of the scale are in order (5 means higher level of agreement than 4, exc.). The critical issue regards the cardinality (Marradi, 2007; Marradi A. & Macrì E., 2012). Usually the different level of the scale are assumed to be equidistant. This means that the level of agreement increases of the same amount of differential measure going from 1 to 2 and 2 to 3, exc. The most advanced statistical analysis have amply shown instead that the Likert scales are not equidistant.

Figure 2 shows the most graph mostly used to represent the analysis on likert scales, representing a two-dimensional space each factor depending on the frequency of the grades given by the respondents on that specific factor. The two axis are the two latent factors which explain the larger part of the variance of the grades (concept very similar to the PCA, principal components analysis).

In the figure 4 it is possible to note that the position of every grade (from 1 to 5) carries with it different meanings since the position on the two axis has strong meaning. The 3 grade, in fact, typically corresponds with neutral level of agreement (x axis) meaning that the respondent is not taking a particularly strong position with his/her answer; he/she does not completely agree (green side) nor strongly disagree with the statement or denying the concept (red side). At the same time the intensity of the attitude at its minimum, with a negative value (y axis), meaning that the 3 grade does not represent a strong opinion and it is sometimes referred as “neutral” grade. The attitude intensity raises with the half-wings (grade 2 and 4). The interviewee affirms a significant level of agreement (or disagreement for grade 2), meanwhile the attitude does not completely correspond to strong commitment on the meaning of such grade. For this reason the half-wings are still considered not binding answers (Marradi A. & Macrì E., 2012). The two extremes (grade 1 and 5) proportionally increase the level of agreement in both direction and, more significantly, carries a dramatic raise of the attitude intensity. The respondent strongly believes that meaning and, for this reason, the agreement bias is much higher.
3.4.1 Correspondence analysis (CA)

One obvious, minimal pre-requisite in order to use Likert scores as cardinal numbers in data analysis is that they be perceived as roughly equidistant along the dimension of interest. Already 50 years ago, Johann Galtung (1967) among others raised serious doubts about the possibility that respondents actually do consider “agree” and “disagree” as equidistant from “uncertain”, given the well-known frequency of acquiescent response sets. Benzecri (1973) maintained that the technique he had just launched on the academic market (correspondence analysis) supplied an excellent means to also control the assumption of equidistance of one of Likert’s short answers from the two adjoining ones. One experiment on Benzecri’s technique consisted on its implementation on three different samples of respondents, and found converging results, all widely apart from the assumed equidistance (Ciampi et al. 2005). Amisano et al (2002). This work replicates their survey on a larger sample of Likert scales coming from ORN’s surveys. Unlike the previous controls, the results diverge largely from one another. Yet, all of them support the confutation of the assumption of perceived equidistance, raising all sorts of further doubts about it.

3.4.2 Correspondence analysis: brief technique description

The CA is a factorial technique that provides synthetic representations of vast matrix of data (eg. Butt's matrix, explained a little Further in paragraph 2.1.2). Similarly to all factorial techniques, it summarizes the variables (often called factors) through one or more combinations of the themselves and includes cases that arise homogeneous with respect to a certain group of variables (Di Franco, 2007). From the technical point of view it can be considered a special form of principal component analysis (PCA), with which it presents similarities both from the mathematical point of view and from a geometrical point of view; the difference lies in the fact that the principal component analysis can only be applied to cardinal variables (Di Franco & Marradi, 2003). The matrix that is subjected to the analysis of matches is rather a contingency table between two or more categorical variables. The representations obtained with this technique are geometric in nature; the proximity between the points is interpreted as semantic proximity (Amaturo, 1989). These representations are the valuable analysis of correspondences, as they allow to have a synthetic image of very large matrices. The technique was developed in the French School dell'analyse des données, led by Jean Pierre Benzecri and established itself since the '70s. The reputation of the school is due in large part to the analysis of correspondences. For this research were built, based on the frequency distributions, matrices that were in line the sentences of the analyzed Likert scales and column response categories (see paragraph 2.1.2). Applying
the CA to this kind of matrices are extracted two factors that in the technical literature are interpreted as the representation of the agreement-disagreement dimension (first factor) and the intensity of the attitude (second factor), as shown in figure 14.

A representation consistent with the assumption of equidistance and with the semantic value of the response categories provided by the Likert scales should then have roughly the shape of the diagram in figure 2. However, Likert himself did not declare the equidistance between the expressions along the segment, this means that he did not state that he’s scale was a cardinal (1932).

As intuited Thurstone (1928), the deviation from the linearity can be considered mild if for some reason, structural or semantic, the distance between pairs of contiguous positions along the scale is similar. But the more we move away from equidistance, the less justified the practice of using the ladder as a cardinal in question. In the case of a simple scale such as Likert, the problem can be decomposed into two: the equidistance of the two wings of the scale (agreement and disagreement sides in figure 2) from its midpoint ("uncertain", grade 3 in case of a 5 point Likert such as the one in figure 2) and the equidistance of half-wings (moderate agreement or disagreement, grades 2 and 4) from the center ("uncertain") and extreme wings (agree or disagree, grade 1 and 5). Nehemiah Jordan dedicated an entire article (1965) to challenge the assumption that the distance of the two wings of the center were the same, arguing that for the majority of respondents to disagree with a sentence is psychologically much more demanding than declare the agreement.

### 3.4.3 CA implementation

Correspondence analysis (correspondences analysis, CA) was used with the aim to represent the variables in a low dimensional space that seeks to explain most of the variance of the data possible and to assert whether the likert scales can be assumed to be equidistant or not. The main steps in performing the CA analysis are as follows:

1. Full disjunctive logic array: Each variable is replicated in order to obtain a number of observations equal to the degree of Likert scale. Each variable is replicated and will complete the matrix by placing a 1 when the variable assumes that value of the Likert scale and a 0 in other cases. A binary values matrix is thus obtained in this first step.
2. Butt’s Matrix: is a table of contingencies represents the combinations of the values of the variables in the matrix obtained in step 1. This matrix is very important because in this space you have distances of chi-square and this allows dimensional reduction. This allows to represent the distribution of the degrees of the Likert scale and the variables themselves in this two-dimensional
reduced space with chi-square distances. The graph clearly shows the non-equidistance of the degrees of Likert scale, note for example that the distance between the values 1 and 2 is much less than the distance between 4 and 5; this means that the level of agreement increases a lot more going from 4 to 5 which from 1 to 2.

In figure 5 an initial exploratory analysis is showed. First of all a definition of the factors analyses:

- Labour cost: it represent the cost of the hourly labour in specific conditions such as, mainly, the country.
- Distance from market: the geographical distance between the function and the market in which the firm operates.
- Qualified personnel: this factor represents the importance of qualified personnel for the specific function being relocated.
- Country maturity: such variable takes into account government incentives to attract foreign investments, political stability and economical development of the country.
- Cultural distance: since the cultures between the countries may differ widely, this factors was inserted in the survey to investigate how important was it considered by the firms.
- Co-location of plants and processes: these two factors were inserted in the survey to investigate if the support and services functions being relocated were moved were manufacturing plants or other staff functions were already operating abroad.
- Customer presence: it investigates whether the offshoring is being performed to support a customer already operating in loco.

The bars show the average grades from 1 (red) to 5 (light green) given by survey respondents. In the upper part of the figure the contingency table summarizes how many respondents, which mean statistical observation, had given a specific grade answer to the driver and his significance in the relocation process of their firm. The most important factors in the location choice, which means those which have the highest grades (so the wider green sections), are Labour cost, the search for qualified personnel and the country maturity. The location factors which were evaluated less important are the co-location of plants or processes, customer presence. From such introductory analysis it is possible to observe that the labour cost is the most important factor, the firms are aiming to specific countries with the objective of labour cost reduction. The search for qualified personnel is important too, firms are looking
for knowledge not available in their own country (or available in a unsatisfactory quantity. This is consistent with the finding of Manning, Massini and Lewin. The authors, in fact, recognized that the shortage of science and engineering (S&E) in the domestic countries has forces firms to offshore in order to overcome such issue. This tendency has created a proper global sourcing for talent or, in Lewin words, an “emerging global race for talent” (Lewin et al., 2008, page 1 and Manning et al., 2009).

Country maturity has also a high average grade, such variable takes into account government incentives to attract foreign investments, political stability and economical development of the country (mainly for the infrastructure needed to do business such as electricity providers, internal transportation in general (roads, airports, etc.) and laws. These factors are quite important since companies want to find the infrastructures that allow them to do business effectively. The infrastructure-weakness related invisible costs importance is coherent with findings by Stringfellow et al. (2007) proposed in the paper review paragraphs (paragraph 5.3).
Figure 5: Contingency table obtained on the “Location” factors. The variables are presented with the number of respondents indicating the specific grade of importance in the survey (absolute frequency).

The driver factors showed in figure 6 differing from what we have seen above are:

- Efficiency: enhancing efficiency through business process redesign thanks to the offshoring project.
- Qualified personnel shortage: domestic shortage of qualified personnel.
- Service level: need to improve service levels.
- Competitive pressure: it studies whether the company is relocating abroad due to competitive pressure (e.g., competitors' margin). Which means to stay in the competitive on the market and stay in the business.
- Access to new market: the purpose is to capture those cases in which the firm performs offshoring to access to new markets for products and/or services.
- Global strategy: the offshoring projects is part of a global strategy.
• Time to market: this factor studies whether the company is relocating abroad to speed up its time to market (mainly from logistical and importation process perspective).

Concerning the drivers towards offshoring, shown in fig. 4, the contingency histogram shows that the most important drivers that push firms to offshore are, again, labour cost, competitive pressure, time to market reduction and local strategies concerning the abroad relocation of activities in the home country.

The labour cost importance is still aligned with the theories explored in the paper review paragraphs. The competitive pressure importance points out the industry acceptance and other macro-economic factors that are making necessary the offshoring for the firms in order to stay competitive at global level. The time to market factor highlights that companies are implementing also strategic market-related initiatives with abroad relocation and that these are not merely micro-economic strategies willing to improve companies’ internal performances. The access to a new market low average grade shows that firms are not relocating to enter new markets or, at least, not as main driver. The “in-place” service functions are not seen as strategic for a market entry or new markets development. The shortage of qualified personnel low importance is, apparently, partially in contrast with the result on location factors shown in figure 3. These aspects will be deepened further in this work.
Figure 6: Contingency table obtained on the “Driver” factors. The variables are presented with the number of respondents indicating the specific grade of importance in the survey (absolute frequency).

<table>
<thead>
<tr>
<th>DRIVER FACTORS ABS. FREQUENCY</th>
</tr>
</thead>
<tbody>
<tr>
<td>EFFICIENCY</td>
</tr>
<tr>
<td>------------</td>
</tr>
<tr>
<td>5</td>
</tr>
<tr>
<td>4</td>
</tr>
<tr>
<td>3</td>
</tr>
<tr>
<td>2</td>
</tr>
<tr>
<td>1</td>
</tr>
</tbody>
</table>
The outcomes contingency analysis (figure 7) highlights, as main improvements as results from the offshoring, the efficiency, the organizational flexibility and the competitive pressure decrease. The outcome factors showed in figure 5 differing from what we have seen above are:

Organizational flexibility: this factor studies whether the company has improved organizational flexibility

- Organizational flexibility: this factor studies whether the company has improved its organizational flexibility throughout offshoring.
- Product innovation: here the objective of the survey is to investigate if the firm has produced major product innovation(s) thanks to the offshored function.

The efficiency improvements are a direct consequence of the labour cost reduction, resulting in better efficiency in the internal processes. The organizational flexibility has also been recognized to be concretively improved.

The opportunity to mix the operational activities and services in different subsidiaries depending on the actual convenience (not only for economical reasons) is improved and highly valued by respondents. The access to new markets is not recognized as a main improvement and that is consistent with the driver factors analysis in figure 6, this is not a main driver nor an outcome particularly positive in service offshoring. The innovation also has low average grade, the innovation ability of the firms is not recognizably improved after offshoring according to the respondents.
Figure 7: Contingency table obtained on the “Driver” factors. The variables are presented with the number of respondents indicating the specific grade of importance in the survey (absolute frequency).

<table>
<thead>
<tr>
<th>OUTCOMES FACTORS ABS. FREQUENCY</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>EFFICIENCY</strong></td>
</tr>
<tr>
<td>5</td>
</tr>
<tr>
<td>4</td>
</tr>
<tr>
<td>3</td>
</tr>
<tr>
<td>2</td>
</tr>
<tr>
<td>1</td>
</tr>
</tbody>
</table>

In figure 8 the data relative to the CA analysis are reported. The principal inertias correspond to the dimensions that explain the variation and the percentages in the row below are showing the percentage of such variance of the sample explained from each dimension. The latent factors (highlighted in blue) are the two principal components that explain a total of the (78.3%+17.47%) 95.77% of the variance. These two dimension are used below in representing the CA analysis and the position of every variable of the DB. The purpose of this analysis is to reduce the dimensions of the sample to a two-dimensional space in which it is possible to represent and study the variables. The representation of the Driver factors is shown in the following figure 7.
Figure 8: Output from the CA analysis, the latent factors are the two principal components that explain a total of the 95.77% of the variance (78.3% + 17.47%). These two dimension are used below in representing the CA analysis and the position of every variable of the DB.

**Correspondence Analysis**

**Principal inertias (eigenvalues)**

<table>
<thead>
<tr>
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<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
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<td>0.027001</td>
<td>0.004677</td>
<td>0.001871</td>
<td></td>
</tr>
<tr>
<td>Percentage</td>
<td>78.3%</td>
<td>17.47%</td>
<td>3.03%</td>
<td>1.21%</td>
<td></td>
</tr>
</tbody>
</table>

1 and 2 eig eigenvalues are recognized as the latent factors, they explain the 95.77% of the variance.

**Rows:**

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
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<td>0.121002</td>
<td>0.197624</td>
<td>0.301788</td>
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<tr>
<td>Dim. 2</td>
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</tbody>
</table>

**Colsuns:**

<table>
<thead>
<tr>
<th></th>
<th>Efficiency</th>
<th>Labour Cost</th>
<th>Other costs</th>
<th>Firm Growth</th>
<th>Access to Qualified Personnel</th>
</tr>
</thead>
<tbody>
<tr>
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<td>0.305208</td>
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<td>0.253336</td>
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<tr>
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</tr>
<tr>
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<td>1.185154</td>
<td>0.856684</td>
<td>0.886487</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Qualified Personnel Shortage</th>
<th>Service Level</th>
<th>Competitive Pressure</th>
<th>Widespread Practice</th>
<th>Access to new market</th>
</tr>
</thead>
<tbody>
<tr>
<td>MASS</td>
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<td>Dim. 2</td>
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</tbody>
</table>

<table>
<thead>
<tr>
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<th>Time to Market</th>
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<tbody>
<tr>
<td>MASS</td>
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<td>ChiDist</td>
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</tr>
<tr>
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<td>-0.174417</td>
</tr>
<tr>
<td>Dim. 2</td>
<td>0.427068</td>
<td>0.131833</td>
</tr>
</tbody>
</table>
Figure 11 represents the output of the CA analysis on the “Driver” variables. It is straightforward that the representation does not fully correspond to the ideal situation shown in figure 4. The human interpretation by the respondents, the not equivalent importance of the suggested drivers and the subjective opinion of the interviewee explain the not symmetric structure of the answers. This also explains the importance of this CA analysis in order to have a better understanding on the subjective aspects and different weight of the grades compared to the contingency table in figure 5 that was considering all the grades as proportional and equally significant. The implication is that the 3 and 4 grade express a neutral attitude (“that driver was considered but not particularly significant”) with slightly positive (grade 4) or negative (3) level of agreement. On the most meaningful grades, the 5 correspond to a very high level of agreement (meaning that the specific driver was very significant in the offshoring decision) and that the respondent is taking a strong position with a positive attitude towards the meaningfulness of such driver. The 2 and 1 grades, on the opposite side, represent strong attitude (the respondent is showing conviction in his judgement) and disagreement on the importance of the specific factor in the offshoring decision by the company. That mean that the company did not consider such driver (that was explicitly considered not important. This representation help in the interpretation of the average values of the grades attributed to each driver.

Furthermore, each driver was positioned in the two-dimensional space. The coordinates of each factor can be interpreted as done for the general grade. Consequently, the labor cost is, by wide margin, the most significant driver towards offshoring; having high attitude intensity and strongly positive level of agreement. The respondents agreed to assert the importance of such factor as crucial to determine the relocation project and took a strong position indicating the meaningfulness of the driver. On the opposite side, the access to a new market and the shortage of qualifies personnel were not considered very significant by the interviewee. The level of agreement is quite negative for both factors (meaning they were not important in the decision) and the attitude intensity is also high and shows that the respondents took a strong position stating the low importance of such factor. The more significant area of such graph are the first and second quadrants. That is because they represent the more relevant results of the analysis, with the highest agreement (or disagreement in the second quadrant) and the strongest attitude intensity, meaning the strong stand of the respondent. Such graph highlighted the great importance of the labour cost as driver towards offshoring projects and the irrelevance of the potential entry on a new market or the research for qualified personnel abroad. It is immediately possible to highlight some findings from figure 9. Firm, on average, are driven towards offshoring by the need to reduce labour cost. They tend to consider also other costs, firms growth and a global strategy when relocating, but the main purpose is the reduction of labour cost. This, on back/reshoring point of view, shows that many of the back/reshoring cases generated (or that will be generated) by such relocation projects, are caused by unsatisfying labour cost reduction that pushes firms to relocate again the service function in a different country or to repatriate it. Positive results in other areas, such as service level, will not be considered as important as those in labour cost reduction.
The CA of the location factors (figure 10) also shows a non-equidistant structure between the likert scale grades (eg. the distance between 1 and 2 is much larger than that from 2 to 3, meaning that the attitude intensity and the level of agreement are changing in a wider scale going from 1 to 2 compared to the change of the grade from 2 to 3). This means that the average grades and the absolute frequencies in the Correspondence analysis in figure 3 can not be evaluated as mere average grades (considering the weight of every grade the same) but it is instead needed to take into account that the attitude intensity and level of agreement are not linearly changing. A direct effect on the considerations from figure 3 is that the importance of the 1 grades is much higher that the 2 and 3 grades which have low attitude intensity and very low level of agreement as well. Figure 8 also shows that the co-location of manufacturing is the less valuable factor in the location decision. However, it also shows that the political stability and the government incentives (both close to 2 and 3 averages here) have not the same not significance. The country maturity (that considers government incentives, political and infrastructures in figure 7) is not significant here since the 2 and 4 grades have completely different meaning due, mainly, to their low attitude intensity. The quite frequent 4 grades shows in figure 3 for such factors have not the strong meaning that might be considered from a first look at the absolute frequencies. Another consequence is that the search of qualified personnel, close to number 4 here, is not even close to the importance of the labour cost factor (upper right corner in
That is even if the frequencies in figure 5 shows similar grades by the respondents. However, the strong presence of 4 grades for the qualified personnel search in figure 5 dramatically reduces the overall importance of such factor here in figure 10 since the 4 grade has much less significate than the 5s of the labour cost. What may happen in case the selected host country will not offer actual satisfying results is straight forward, back/reshoring will be implemented to change again the location pursuing labour cost reduction as main objective. It also important to consider that cultural proximity (that has the same perimeter with contrary meaning of the cultural distance) is not evaluated as main factor during the evaluation of the host country. Along with other underestimated factor such as political stability and distance to market it may be a possible cause of back/reshoring since, from the literature review, it was showed that country specific factors have great impact in offshoring results. The low consideration of these factors can be considered as a potentially lethal mistake of firms that underestimate these elements influence and end up causing back/reshoring due to mistaken choices in the location decisions. Another important consideration is the difference in the position of expertise level and talent pool presence in the location evaluation compared to the qualified personnel shortage in the driver factors analysis (see fig. 9). The straight forward conclusion is that firms are not, on average, implementing offshoring to search for qualified personnel but they look carefully for it in the specific host country they choose. To assure good performance of the relocated function, in fact, they need to hire qualified local professionals and the evaluation of such factor in the country is done with high focus on it. It must be noticed that evaluating such aspects in different country, with different cultures, instruction standards and academic structures may not be a simple tasks. This involves that firm may be mistaken and that such mistakes may not allow the offshored function to perform properly, resulting in an back/reshoring.
The CA analysis on the outcome factors, that collect the answers of the firms representatives concerning the overall output of the offshoring project, is showed in the following figure 9. Again, it is straightforward that the grades are not equidistant and, perhaps, the results have to be carefully analysed. The access to new market is not considered very much improved, with negative agreement and discrete attitude intensity. The interviewee are committed with the negative consideration of the new market access throughout offshoring. Such result is aligned with the result of the CA for driver factors (see fig. 9) that showed that the access to new markets is has extremely low importance in the choice on an offshoring project. The conclusion after figures 7 and 9 is that such aspect is also far from being a possible cause for back-shoring since the firms have no expectations on access to new markets. Product innovation and process improvements also have negative agreement but with very low attitude intensity. This means that the respondent are judging their results as negative but with a weak stance on the subject. They do not consider the improvement in this areas to be significant but they also show a low resolve in such grade. Clearly, the meaning is that the focus in offshoring process is on different areas. From the very low attitude intensity it is possible to assume that product innovation and process improvements are not the main area on which the offshoring is evaluated and, therefore, they are unlikely to be causes for back/reshoring. Firm growth is positioned close to the origin of the axis, meaning that it is considered but it is not a main
evaluation criteria on the overall project. Service quality and core competences improvement have negative attitude intensity and positive agreement. However, the very low attitude intensity makes them secondary when it comes to the evaluation of the project. Their position in the graph means that they are monitored as significant aspects but that there are not the main focus of the company offshoring project outcome evaluation. The talent pool factor is considered with positive attitude intensity and considerable level of agreement. For this reason it is an area the offshoring contributes to improve and that is carefully evaluated by the firm. This is coherent with the talent pool and expertise importance highlighted in the CA on location factors (figure 10) and also with the global talent sourcing findings by Manning, Massini and Lewin previously commented (Lewin et al., 2008, page 1 and Manning et al., 2009). With lower attitude intensity but slightly higher level of agreement, talent pool factors shows similar results with slightly lower statistical relevance due to the poor attitude intensity. The production efficiency is positioned with a very high level of agreement but only moderate attitude intensity. The meaning is that the production efficiency has improved but that it was not the main focus of the evaluation or that is was an obvious consequence of the improvements in the labour costs that have driven the whole project (see figure 9 and 10). Despite that it is important to acknowledge that the production efficiency is recognized to be considerably improved throughout offshoring. Organizational flexibility is another important factor that is judged improved with the offshoring. The opportunity to balance activities between different locations and to divide the activities flow can help the company gain flexibility and, perhaps, competitiveness. This aspect reflects what was expressed by Jensen and Pedersen (2011) when they suggested that the disintegration of the supply chain and the internal processes might improve firms flexibility and the offshoring of advance tasks. Competitiveness, at last, is the most improved factor according to the interviewees. The logical conclusion on the improved efficiency and flexibility (coupled with the labour cost reduction not inserted as separated outcome in the survey but conceptually included as component in these production efficiency and competitiveness) is a dramatic growth of firm’s competitiveness, resulting in the main result of the offshoring. Clearly, due to the importance and attention in the evaluation by the companies, unfulfilled expectations in these factors might be considered as main causes of back/reshoring. These analysis shows the importance of the different KPIs, inserted in the survey, in the evaluation process that every firm does on each specific offshoring process. It also shows how, on average, an offshoring projects performs. Allowing to great improvements in competitiveness, organizational flexibility, production efficiency (thanks to labour cost reduction mainly, expertise level and talented personnel procurement. Firm growth, core competences enlargement and service quality improvements are not particularly relevant, due to very poor attitude intensity. The firm growth may not be particularly
aligned with the expectations showed in the driver factors analysis (see figure 7). Such finding raises the possibility that back/reshoring might be cause by unsatisfying firm growth, that pushes the firm to repatriate or change the host country. Furthermore, production efficiency improvements may not be aligned with the importance that labour cost reduction has in the decision making process as driver towards offshoring and location decision factor (see figure 9 and 10). It can be said, then, that usually the labour cost reduction is not fully consistent with objectives and expectations, resulting in a potential cause of back/reshoring.

Figure 11: “Outcome” variables representation after the CA analysis.

Usually correspondence analysis stops to the representation resulting from the Butt’s matrix. However, other studies can be made from the above graph. The representation of the distance of the variables can be described by the Euclidean distance. This has given rise to an innovative area of statistical analysis that gave birth to the two-way clustering (Antonio Ciampi et al., 2005).
3.4.4 Two-way clustering

In order to differentiate different tendencies in firms' behaviour, the two-way clustering was implemented. Since the average trends may obscure different paths in the CA analysis, the idea behind the clustering is to highlight different facets to discover more potential causes of back/reshoring. The two-way cluster is a forefront type of analysis that tried to quantify what the Butt's matrix expresses in chi-square distances in euclidean distances instead. The methodology is to start from a vector space in which the values of the variables derived from the Likert scales are represented in euclidean distance (from the CA, see figures 9, 10 and 11) and then cluster them with traditional cluster algorithm. The correspondence analysis is therefore followed by clustering of both rows and columns of a data matrix (Butt's matrix) this is the two-way clustering approach. The process can be summarized as follows:

1. **Principal components**: identify the factors that are able to describe most of the variance of the data, similar to the PCA (Principal Components Analysis). These factors are the latent factors showed in figure 6 and used as x and y axis in the CA representation figure 9, 10 and 11.
2. **Observation** are represented in a new and dimensionally reduced vector space.
3. **Active and descriptive variables** are selected.

Active variables: variables that are best describing the phenomenon by describing the most of the variance.

Descriptive variables: variables that provide a set of additional information useful to describe the phenomenon but that are not properly characterizing the phenomenon.

In the following pages the application of the two-way clustering to the 3 most important families of Likert variables of the ORN DB used in this analysis and the relative results are shown. The 3 variables are:

- **Variables “Location”**: variables which are asking the importance of different factor on the location decision process of the offshoring. In the previous CA analysis (see figure 8) the average tendencies were represented. With the clustering it is expected to give more focus to other trend in the way firms choose the host country for their offshoring. This process will allow to highlight the possible evaluation mistakes that may cause back/reshoring.
- **Variables “Driver”**: variables which are asking the importance of different factor as drivers in the offshoring process. They try to capture the finality with which the relocating is implemented. That is particularly important in the study of the invisible costs because they highlight what the companies are evaluating when relocating and what they are not taking into consideration. In figure 9 it was showed the general factors that drive firms towards offshoring, the purpose
here is to investigate if there are firms with very different paths that’s was not captured in the previous analysis. There might be firms that pursue offshoring for very different reasons from the average (fig. 9) and that, in the same way, will or may do back/reshoring for different reasons from the average companies.

3.4.4.1 Location factors

The clustering algorithm was implemented using the location factors showed in figure 8 that are labour cost, distance from market, qualified personnel, government incentives, political stability, language proximity, co-location of plants and processes, expertize level, other costs, cultural proximity and talent pool. The cluster algorithm (using Euclidean distance and complete linkage hierarchical procedure) suggests 3 clusters (see figure 12) that can be described as:

- Cost oriented (light-blue)
- Sinergy oriented (dark-blue)
- Intermediate (blue)

The names of the clusters were coined when the average factor values were studied. That is because the labour cost (and “other costs” factors too, but less significantly) has a very high value for the first cluster while progressively lower in the other two. In the same way the co-location factors were very important (high survey grades) for the group of firms that is inserted by the algorithm in the cluster synergy oriented. Such companies implemented offshoring projects were the focus was not mainly on costs (which has lower average grade compared to the cost-oriented cluster) but were the focus was on creating synergies between the new delocalized service function and a previously offshored function (production plants or other processes and functions). What is particularly important is that the companies are showing two kinds of orientation. One is definitely cost oriented which mean that the main goal of the relocation is the perform significant savings, that coherent with the CA analysis on drivers and location factors earlier discussed (see figure 9 and 10). The cost that usually the companies are expecting to drop is the labor cost. The second current is the synergy looking approach which means, as will be shown in the graph, that the companies are choosing particular countries as destination for the relocation because they are closer to the final market or to specific customers as argued by Contractor et al. (2010). In this category fall also firms that have other functions or plants operating in loco or that have suppliers operating in that specific country. This is coherent with what suggested by Pisano and Shih (2009) reported in 5.3.2.4 paragraph. The authors pointed out the fact that distance (both geographical and cultural) may erode companies’ knowledge and performance. With this respect the co-location of different
activities generally improves their effectiveness Pisano and Shih (2009). This stand both internal functions and for supply chain partners. These firms are looking for synergies within the company, with suppliers or to have a better connection to the market.

An important consideration is that the cultural distance is considered marginally important in this phase (offshoring decision process and location decision). In fact, figure 4 shows that the cultural distance is evaluated with a 3 out of 5 relevance which corresponds, according to the CA analysis, to indifference. Such fact immediately highlight a contradiction between what emerged from the literature review and the actual firms’ behaviour and decision path since the literature highlighted that cultural distance can cause many kinds of invisible costs. Later on this contradiction will be deepened with more analysis. It can be concluded straightforward that hypothesis 2 is confirmed, meaning that companies are actually seriously underestimating the importance of cultural distance.

The following figure 12 shows more interesting aspects on each specific factor. Considering the two “extreme of the continuum” clusters, the cost-oriented and the synergies-oriented, it is possible to see their consideration of a specific factor. As previously mentioned the labour cost is very important for the cost-oriented firms (average grade 4.5/5) while it has low relevance for the synergies-oriented cluster (average grade 2.3/5). The distance to the final market has quite low importance for the cost-oriented cluster (1.5/5 average grade) while it very significant (4.2/5 avg. grade) for the synergies-oriented cluster. Qualified personnel research has 4 out of 5 average grade in the cost-oriented cluster while 2.7 out of 5 for the synergies-oriented cluster. This highlights that the companies are not only looking for more economical labour force but that they need it to be highly qualified too. Country maturity and cultural distance have not too divergent grades between the clusters. The co-location of plants and processes along with customer presence highly contribute to improve the characterization of the two clusters. These 3 factors have high importance for the synergies-oriented cluster (average grades, respectively of 4.1/5, 3.9/5, 3.75/5) while they are not significant for the cost-oriented firms that graded them very low showing that these factors where not important in the decision process about the location to which offshore the service function (average grade, respectively, of 1/5, 1.9/5, 1.2/5).
Figure 12: Two-way clustering implemented on location variables. Summary and average values.

In figure 13 and 14 the active factors are represented. The two-way clustering algorithm suggests the main variables that contribute to the definition and distinction of the clusters, the factors are called active factors. This focused representation might help to understand the orientation and the differences between the clusters, with specific focus on the efficiency seeking and synergies seeking clusters. In figure 11 it is possible to see the main variable that generates and characterizes the cost-oriented cluster, the labour cost. This factors is extremely important for one cluster (cost-oriented, average grade of 4.5 out of 5) while it is not very relevant for the synergies-oriented cluster (average grade 2.3). That confirms that many firms are acting, during the decision process involved in an offshoring initiative, guided by the cost reduction pursuit.
Figure 13: Efficiency seeking cluster (from two-way clustering of location variables) active variables and average values.

Figure 14 shows the 4 factors that define the synergies-seeking cluster. The firm which fall into this category aim to co-location of production plants and other processes, to relocate in the countries in which the customers are located and to reduce the distance to the market (related to the customer presence and to logistical necessities the companies want to improve). That is very significant since there were not such finding in the paper review. The finding shows that many firms are not giving high importance to cost reduction but, instead, the location itself considering the strategical importance of the presence in a specific country or region. In order to reduce the logistic time to market and to be closer to the customer fro many additional reasons (the previous time to market reduction reason but also for pre and after purchase assistance, customer trust improvement, awareness building initiatives, etc.). On top of all these purposes, the co-location of the service functions with previously relocated activities (processes or plants) in order to improve the overall performances is another main driver for the firms belonging to this synergies-seeking cluster.
This clustering suggests that might not implement back/reshoring strictly due to unsatisfying cost reductions. The synergies-seeking cluster firms more probably might back/reshore in case of change of global strategy or change in overall conditions that may push them to relocate all the offshored functions, co-located in the same host country. This is consistent with the second school of thought found in the paper review paragraphs. According to such conception, firms back/reshore not only due to previous mistakes but also due to change in the host country or general economic situation changes. Kinkel (2014) estimates that 20% of total German companies’ reshoring decisions are mid- or long-term reactions to changes in the local environment. Firms belonging to synergies-seeking cluster have tried to improve the value chain synergies that is another critical element in offshoring success. This may not always be accomplished, giving raise to back/reshoring. Another possible, and different from what may drive cost-oriented firms towards back/reshoring, is that the advantages of reduced distance to the market and the presence closer to the customer might not be aligned with expectation. This may cause short or mid-term corrections throughout back/reshoring.
3.4.4.2 Driver variables

After the location decision process the focus, and also the clustering algorithm implementation, focus on the Driver variables. The clustering algorithm was implemented using the driver factors showed in figure 9 that are labour cost, qualified personnel shortage, other costs, firm growth, competitive pressure, global strategy, efficiency, time to market reduction, service level improvement, common practice (industry acceptance), access to new market. As earlier explained these variables’ purpose is to capture the driver that are pushing companies towards offshoring. The clustering algorithm (using Euclidean distance and complete linkage hierarchical procedure) suggests 2 clusters of firms with two different main strategies (shown below in figure 8) that can be described, according to Dunning’s classification, as:

- Efficiency seekers: the first cluster has offshoring propensity to seek cost savings and therefore greater efficiency (shown in yellow in the following figures).
- Market seekers: these companies are approaching the offshoring to enter new markets (in red in the figures).

The names of the clusters were coined when the average factor values were studied and the according to the most significant factors characterizing the clusters. That is because the labour cost (and “other costs” factors too, but less significantly) has a very high value for the first cluster while progressively lower in the other two. The descriptive variables instead allow us to better characterize the differences between the two clusters. The following figure 15 summarizes the driver factors average grades for the two clusters.
The following figures 16 and 17 are showing the active and descriptive variables for the two clusters. As previously specifies, the active variables in figure 14 are the two variables that the algorithm used to build the clusters while the descriptive variables in figure 17 are the variables that are not directly discriminating between the two clusters but that can help to have additional information to describe the clusters. Figure 16 shows the two principal variables describing the difference between the two clusters (called active variables). In the yellow cluster are contained firms which are performing offshoring to obtain labour cost saving, generally looking for savings and efficiency in the labour work. The second cluster (in red) is driven by the intention to enter a (or many) new market and does not consider the saving in labour costs particularly important (on the left it is possible to see that the average grade of importance of the labour cost is a little higher that 2.5 out of 5, meaning indifference on the subject). On the opposite it is also represented that the average grade is 4 for the access to a new market (while is 2 for the savings-oriented cluster). The reason for these firms “market oriented” are many (time to market reduction, pre and after purchase assistance, customer trust improvement, awareness building initiatives, etc.) but all oriented in pursuing a different approach to the market and final customers instead of improving the internal micro-economical indicators and performances. That is the main difference between these two clusters that raises from this analysis.
Figure 16: Two-way clustering on the active Driver variables and average values

![Driver factors clustering: Active variables](image)

Figure 17 shows additional information represented by the descriptive variables. These variables were not critical in the clusters building process by the algorithm by they offer some additional information and interpretation to the previous figure 14. For example it is possible to see that the efficiency is important for both clusters, meaning that even though the market oriented cluster does not focus on pure cost reduction they still take into great consideration the overall impact on efficiency of the offshore initiative. Furthermore, the qualified personnel shortage is not a particularly significant driver towards relocation for the firms of both clusters. The service level, predictively, is more important for market oriented firms but still significant for both clusters. The competitive pressure plays a more important role for the cost-oriented firms. Both clusters are showing an ongoing global strategy of the firm involved into the offshoring process, with higher grade for the market-oriented (3.70/5 compared to 3.25/5 for the cost-oriented cluster). Time to market is much more important for the market-oriented cluster (3.8/5 compared to 3.2/5), this is consistent since they both are market related factors. To summarize the findings of the analysis, the two-way clustering showed that there are two different orientations of the firms in the way they are influenced by drivers towards offshoring. The cost-oriented firms are mostly driven in their relocation by the labour cost reduction, induced by efficiency pursuit and competitive pressure. On the other hand, market-oriented firms are driven by the entrance in new markets, with additional focus on service level and time to market reduction. In the purpose to explain the back/reshoring through a deep dive into
offshoring, it is possible to see that the cost-oriented cluster probably is composed by firms that, in case of dissatisfaction with the offshoring initiative, will simply correct the project relocating elsewhere (back/reshoring). That is also consistent with the first school of thoughts highlighted in the paper review which see the back/reshoring as short-term correction of offshoring decisions (described in 2.2.2 paragraph). From such point of view back/reshoring is the consequence of the failure of offshoring initiatives (see, among others, Müller, 1996; Borgmann et al., 2000; Schulte, 2002; Aron & Singh, 2005; Leibl et al., 2009; Larsen et al., 2011; Stringfellow et al., 2007 and Fratocchi et al., 2013). Since these firms have not any particular bond with the host country, they are not interested in the internal market specifically but mainly the labour cost, they may quickly relocate again where the labour cost conditions are more convenient. Concerning the market-oriented cluster, whom main purpose is to enter a new market, to improve time to market and other services to the final customers, these firms are less likely to perform back/reshoring since their commitment to that specific host country is greater because of strategical market strategies.

Figure 17: Two-way clustering on the descriptive Driver variables and average values (savings-oriented cluster in yellow, new market entry-oriented cluster in red).
The analysis points-out that such different drivers to offshoring also correspond to very different reasons and causes to back/reshoring. While cost-oriented firms will likely back/reshore in case of changes in the economical convenience of the host country itself, the market oriented firms’ back/reshoring will more likely correspond to disappointing results in the new market. In case the outcome from the new market entry and time to market reduction may cause changes in the global expansion strategy and cause a back/reshoring. In this case back-shoring seems a more suitable options since the firm may simply repatriate the functions renouncing on the expansion in that specific market/region.
3.5 Correspondence Analysis grades ponderation

According to Marradi (2007) and Marradi A. & Macrì E. (2012) a possible way to include the CA Level of Agreement and Attitude Intensity calculations in further analysis is to weight each factor accordingly with its coordinates with respect to the levels of the Likert scale. The position of the values related to the Likert scales (from 1 to 5 in this case) are expressing their respective Level of Agreement and Attitude Intensity while the same coordinates are computed for each factor (Location factors, Driver factors and Outcome factors). For each observation, the grade by the interviewee are then evaluated with respect to the overall frequency of each grade (the frequency of the grade 1 for all the observations and for the factors, the frequency of the grade 2 for all the observations and for the factors, etc.) and the relative frequency of each grade with respect to the respondent (the frequency of the grade 1 for all the factors graded by the interviewee, the frequency of the grade 2 for all the factors graded by the interviewee, etc.). With this process all the Likert grades for each observation are evaluated with respect to the overall coordinates of the grades.

Comparing the coordinates of each observation’s specific factor with the grades’ coordinates (see figure 9, 10 and 11) it is then possible to rescale the grades of the factors. This re-scaling takes into account the personal and subjective interpretation of the survey’s question (Marradi, 2007) allowing a fair representation in comparable grades between the respondents. Through such process it is possible to use an homogeneous scale for all the respondents (Likert scale from 1 to 5 in this case) that takes into account the interpretations and personal tendencies of each respondent. This last aspect is expressed with the frequency of each grade by each interviewee. For instance, in case the respondent is using very few low grades, then his/her high grades are less valuable than an average grade. The same process can be applied at factor level. Being more specific, the grades related to the Outcome factors have the following grade frequencies.
**Table 15: Outcome factors grades frequencies in the ORN database.**

<table>
<thead>
<tr>
<th>Grade</th>
<th>Absolute Frequency</th>
<th>Relative Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1581</td>
<td>16%</td>
</tr>
<tr>
<td>2</td>
<td>1230</td>
<td>13%</td>
</tr>
<tr>
<td>3</td>
<td>1899</td>
<td>19%</td>
</tr>
<tr>
<td>4</td>
<td>2669</td>
<td>27%</td>
</tr>
<tr>
<td>5</td>
<td>2393</td>
<td>24%</td>
</tr>
</tbody>
</table>

It can be seen that the relative frequencies are not equally distributed (an equal distribution of the interviewee’s grade would suppose a 20% relative frequency for each factor). This means that the change of opinion (both positively and negatively) does not vary equally going from 1 to 2 as it does going from a 3 grade to a 4. Going from a 3 to a 4 implies a major variation compared to go from a 1 to a 2. That is because of 4’s greater importance in the respondents opinion representation. Combining such analysis with the overall grades frequencies at factor level produces the graphs represented in figure 7, 8 and 9. Weighting the coordinates of each factor with the overall likert grades coordinated, the average values can be re-scaled as shown in table 16, 17 and 18.

In table 15 the results of the above analysis are represented. The result show that the average grades change with adjustment suggested by the CA analysis. Marradi A. & Macrì E. (2012) stated that these results are more reliable since they take into account the different context regarding each factors allowing a better representation of the grades. That is because each factor (depending also on the specific question in the survey) can be perceived slightly differently between different respondents and because each grade can be perceived slightly differently resulting in a non-equivalent grade utilization by the respondents. This adjustment considers, then, a multitude of subjective elements that are highly affected by subjective interpretations and grading tendencies (for example, two different respondents may grade differently. With one
interviewee giving higher grades because of the negative perception of a low grade Marradi (2007).

Regarding table 16 results, the Labour Cost location factor recognizes as more important than what it is suggested by a normal average evaluation. Labour Cost location factor average grade, in fact, changes from 3,97 to 4,85. Even if the change in grade is quite important, the factors still remains the highest (it does not change its relative ranking with respect to the other factors). Such result, while important, is not particularly significant. Distance from Market location factor changes its average grade from 2,87 to 2,02. This result highlights that the distance from the final market is less considered from the companies. Such result is particularly significant because the factor moves from a “neutral” position (the arithmetic average value was previously close to 3) to a lower level of agreement position. This factor is, then, considered less important by the companies during the location decision compared to what it might seem from a simple average grade evaluation (see also figure 5).

Qualified personnel location factor average grade changes from 3,74 to 4,51. Such difference reveals that this factor is highly more important than previously expressed. Even previously this factor was among the most significant (its average grade was one of the highest) but its change compared to the Labour Cost factor is significant. Even if the change in grade is quite important, the factors still remains the second highest (it does not change its relative ranking with respect to the Location Cost factor since they both raises around 20%). Such result, while important, is not particularly significant.

The subsequent result is interesting, the Cultural Distance location factor average grade changes from 3,01 to 2,53. Such difference reveals that this element (cultural distance between host and home country) is rated with as slightly less significant than the “neutral” value. Such finding is aligned with Larsen et al. (2013) point of view since the authors also suggested that this factors is underestimated by firms. Such low focus of the offshoring firms with respect to the cultural distance is particularly significant when coupled with its impact on hidden costs. According to the first school of thoughts Back/Reshoring consists in a wide part of short-term correction to mistakes during the
offshoring project implementation (see also Stringfellow et al., 2007). The undervaluation of some elements is crucial as cause of these negative effects that push firm to back/reshore. The cultural distance, Larsen et al. (2013) also positively related with the hidden costs and with the back/reshoring probability as well. The main information raising from this analysis is that Cultural Distance is not considered neutrally (as the 3,01 average grade seems to suggest) but its undervalued by the companies. This lack of focus may lead, along with other factors, to back/reshoring. Such finding point out that major consideration must be directed to the subject compared to the actual average practice by professionals.

Co-location of Plants and Co-location of Processes location factors have changed widely their grades. They dropped around 50% in the average grade (respectively, from 2,48 to 1,21 and from 2,81 to 1,52). If from an initial average evaluation they seemed slightly (but not dramatically) undervalued, they are at the very bottom of the ranking in the new CA pondered averages evaluation. These factors have low importance from interviewee point of view in the location decision made by their firms. Such dramatic changes highlights that firm are usually not influenced by previous offshoring initiatives and attracted the host country of a previous offshoring project. The firms are not, usually, oriented to the co-location of functions that have been offshored separately. Such finding also suggests that the synergies-oriented cluster in the two way clustering showed in figures 12, 13 and 14 shows a tendency that has been manifested by few companies. This relates to such clustering result meaning that there is a small percentage of offshoring initiatives concentrated in the co-location of the relocated function with previously offshored functions. Such companies are also less likely to back/reshore since they have already overcome the short-term correction period highlighted by first school of thoughts. According to Gray et al. (2013) in fact, the Back/Reshoring consists in many cases of short-term corrections to mistaken offshoring projects and investments (see also Li and Tang, 2010 and Kinkel and Maloca, 2009). The Customer Presence factors changed its average grade from 2,74 to 1,35. Such result shows that this factor is, along with the co-location factors, very underestimated. The interviewees “neutral” grades (average grade 2,74) were instead
carrying a very different meaning. The effective customer base in the host country is, in fact, very much underrated compared to other location factors such as Labour Cost or Qualified Personnel availability. This factor also provide some possible conclusions on the back/reshoring. Back/reshoring companies will, in fact, very unlikely relocate (back/reshore) due to market penetration unsatisfying results or due to other host-country related customer elements. Along with the Co-Location factors, shows that the synergies-seeking cluster in figures 12, 13 and 14 represents a small portion of the observations in the database. For these firms, Customer Presence might became a key factor to be pursued also through Back/Reshoring, moving the functions closer to the target customers in case of changes in the customer base. The host country is not strategically significant in the project and, perhaps, host country’s internal market is unlikely to cause back/reshoring.

Table 16: Location factors average grade comparison with the CA pondered average values.

<table>
<thead>
<tr>
<th>Location Factors</th>
<th>Weighted Avg.</th>
<th>CA Pondered Avg.</th>
<th>Δ Delta</th>
</tr>
</thead>
<tbody>
<tr>
<td>Labour cost</td>
<td>3,97</td>
<td>4,85</td>
<td>22%</td>
</tr>
<tr>
<td>Distance from market</td>
<td>2,87</td>
<td>2,02</td>
<td>-29%</td>
</tr>
<tr>
<td>Qualified personnel</td>
<td>3,74</td>
<td>4,51</td>
<td>21%</td>
</tr>
<tr>
<td>Cultural distance</td>
<td>3,01</td>
<td>2,53</td>
<td>-16%</td>
</tr>
<tr>
<td>Co-location of plants</td>
<td>2,48</td>
<td>1,21</td>
<td>-51%</td>
</tr>
<tr>
<td>Co-location of processes</td>
<td>2,81</td>
<td>1,52</td>
<td>-46%</td>
</tr>
<tr>
<td>Customer presence</td>
<td>2,74</td>
<td>1,35</td>
<td>-51%</td>
</tr>
</tbody>
</table>
Table 17: Average confrontation analysis result proving the difference in the average grades between the simple average grade and the CA pondered average grades of the Location Factors in table 1.

<table>
<thead>
<tr>
<th>Variable</th>
<th>N</th>
<th>Mean</th>
<th>StDev</th>
<th>T</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>D</td>
<td>1947</td>
<td>0.3252273</td>
<td>0.18272230</td>
<td>0.48</td>
<td>0.008</td>
</tr>
</tbody>
</table>

The sample examined in for the CA ponderation (table 16 and 17) comprehends all the observations which had grades in all the Location Factors analysed (in total, removing the missing data 1947 Offshoring projects).

Moving to table 18, the results are widely differentiated fluctuating from -59% to +16% variations.

The Efficiency driver factor shows a very weak change, from 3.28 to 3.25. This confirms that the efficiency is overall well studied from an average grade study. Firms are driven toward offshoring seeking improvements in efficiency that is considered slightly above average. Companies are taking such factor in consideration but it is not the most important. From a back/reshoring point of view, no undervaluation of this factor is made during the offshoring process, apparently. For this reason is unlikely to have back/reshoring initiatives cause by mistakes in this factor consideration, this is aligned with the main driver (labour cost) that is strictly related to the overall efficiency objectives.

Labour cost driver factor is confirmed as the dominant driver, with 16% increase in the grade (from 4.23 to 4.91). Such finding is aligned with the previous analysis and the confirms that, in case of unsatisfying results in such aspect, the back/reshoring is likely to be performed. According to Stringfellow et al. (2007), back/reshoring caused by cost related factors is not attributed to labour cost misjudgements but to other costs undervaluation or mistaken forecasting instead. A widely recognised example considers hidden costs as a cost-related cause of Back/reshoring. Labour cost is more strictly related to the second school thought that asserted that changes in time may deeply change the initial conditions evaluated during the decision making process on
offshoring (Dachs and Kinkel, 2013; Gales, 2008 and Kinkel, 2014). In such cases, the back/reshoring is caused by changes of average wages and other labour-cost elements (for instance, labour taxation, minimum salary laws introductions or modifications, etc.). A case was experience in China, where the average wages increased by 15%—20% a year between 2000 and 2009 (Sirkin, 2011), forcing offshoring firms to reevaluate the offshoring convenience and causing, in certain cases, back/reshoring.

Qualified Personnel Shortage reduced its importance with the CA ponderation, moving from 2.68 to 1.51 average grade. This is quite important because it shows the purpose of the CA ponderation. Apparently, the average grade was close to “neutral” (3) because of a social tendency to not admit that the companies were not looking for particularly skilled labour abroad. Jensen and Pedersen (2011) found that the propensity to offshore advanced service tasks vary widely along different firms. The results of their study indicated that this in part may be explained by the level of prior experiential learning in the firms. In case of a reluctant point of view on advanced tasks offshoring, interviewee may have avoided to openly state such thing and to stay clear from possible criticism because of discrimination towards local professionals.

Concluding, even though interviewee graded as “neutral” the Qualified Personnel Shortage driver, asserting it was taking into account but not as main driver, it was a very low-importance driver instead. For empirical analysis it means that result of analysis on such factor were overestimating the significance of this factor. Concerning back/reshoring it is possible to highlight that companies are not interested in more qualified personnel when offshoring and, because of that, it is unlikely that Qualified Personnel Shortage may cause back/reshoring.

Moving to the next driver factors, Service Level changed its avg. grade from 3.17 to 3.21, remaining near to the neutral grade. This means that firms are driven by Service Level improvement but not as main objective in their project. Moreover, no particular changes in the evaluation of this factor may arise from the CA ponderation. From a Back/Reshoring point of view there are not specific aspects related to Service Level since the literature review did not raise any critical aspect and the firms seem to take such driver into appropriate consideration.
The Competitive Pressure is confirmed as one of the most important drivers pushing the companies to relocate their functions. The raise in the average grade from 3,43 to 3,73 (+8%) makes it the third most important driver. It is quite clear that firms are not deciding only from internal factors whether to offshore or not. The competitive business world is forcing these firms to offshore to improve their competitiveness and to stay in the business. Sometime thought, macro-economical driven offshoring project might cause and undervaluation of more firm-specific elements, causing inadequate offshoring outcomes and short-term corrections with Back/Reshoring initiatives. According to Hutzschenreuter et al. (2011) industry acceptance is one example of a dangerous element that may drive managers to offshore without the appropriate evaluations about their firm’s situations.

The Access to New Market driver factor changed its average grade from 2,57 to 1,05 with a dramatic reduction of 59% in its grade. Such important result testifies, again, the significance of the CA ponderation. Weighted with the grading frequencies, in fact, it is possible to recognize that the average grade does not reflect the actual significance of the driver. That is because the average grade has a very low level of agreement. The grade reduction is caused by the low significance attributed by the CA analysis to the grades given by the interviewee to this factor. The result is that the actual significance of the factors is much lower that what could have been detected by the grades. The surveys were completed with grades that were carrying low significance, reducing the weight of the higher grades while raising the impact of the low grades. The 2,57 average was then hiding a tendency that was to not consider such factor as important in the offshoring implementation. How such result impacts the previous studies on such data? The meaning of the Access to New Market driver factor was consequently overestimated in analysis that were using the mere survey grades as data source. The reason is that they were not taking into account the psychological and subjective content of the survey. From a Back/Reshoring it is possible to observe that the access to a new market through offshoring is unlikely to be pursued and, for this reason, it is an improbable cause of Back/Reshoring, confuting what expressed by
Thelen et al. (2011) who pointed out one of the potential short-term corrections causes in this factor.

The Global strategy driver factor changed its average grade from 3.51 to 3.83 with an increase of 9% in its grade. This is an important result since it position this factors as the second most significant factor that drives firm to offshore. Furthermore, is highlight an aspect that was not captured in the paper review study, the importance of a global strategy that drives the internationalization and global sourcing of companies in the offshoring of services (Manning et al., 2009 and Jensen & Pedersen, 2011). From a Back/Reshoring point of view the linkage is quite straight forward, the relocation of the previously offshored function might be implemented also in the case of a change in the global strategy of the firm, implying that analysing the offshoring project as a separated event (as it is treated in many statistical analysis) may loose this information. This may cause a misinterpretation of other events and may led to underestimate the cross-influence between all the offshoring project a company has implemented. This traduces into the advice to combine singular observations analysis (where each project is threated independently from the others) with other firm-focused analysis with the purpose to capture each company’s path and multiple projects. In this way it is possible to capture not only the cross-project effects but also the overall strategy driving them all. According to such findings, Fratocchi et al. (2014) asserted that the de-internationalization affects as an overall strategy involving all the offshore functions. Also de-internationalization strategies as a concept were already present in the Welch and Luostarinen (1988) theoretical conceptualization of the corporate internationalization process as an inevitably continuous process. Calof and Beamish (1995) also pointed out the presence of Back/Reshoring strategies as firm level.

Finally, the Time to Market driver factor does not show meaningful changes in its grade (from 3.34 to 3.32, meaning a -1% variation).
Table 18: Driver factors average grade comparison with the CA pondered average values.

<table>
<thead>
<tr>
<th>Driver Factors</th>
<th>Weighted Avg.</th>
<th>CA Pondered Avg.</th>
<th>Δ Delta</th>
</tr>
</thead>
<tbody>
<tr>
<td>Efficiency</td>
<td>3.28</td>
<td>3.25</td>
<td>-1%</td>
</tr>
<tr>
<td>Labour cost</td>
<td>4.23</td>
<td>4.91</td>
<td>16%</td>
</tr>
<tr>
<td>Qualified pers.shortage</td>
<td>2.68</td>
<td>1.51</td>
<td>-44%</td>
</tr>
<tr>
<td>Service level</td>
<td>3.17</td>
<td>3.21</td>
<td>1%</td>
</tr>
<tr>
<td>Competitive pressure</td>
<td>3.43</td>
<td>3.72</td>
<td>8%</td>
</tr>
<tr>
<td>Access to new market</td>
<td>2.57</td>
<td>1.05</td>
<td>-59%</td>
</tr>
<tr>
<td>Global strategy</td>
<td>3.51</td>
<td>3.83</td>
<td>9%</td>
</tr>
<tr>
<td>Time to market</td>
<td>3.34</td>
<td>3.32</td>
<td>-1%</td>
</tr>
</tbody>
</table>

Table 19: Average confrontation analysis result proving the difference in the average grades between the simple average grade and the CA pondered average grades of the Driver Factors in table 3.

<table>
<thead>
<tr>
<th>Variable</th>
<th>N</th>
<th>Mean</th>
<th>StDev</th>
<th>T</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>D</td>
<td>1735</td>
<td>0.176248628</td>
<td>0.179882935</td>
<td>0.45</td>
<td>0.019</td>
</tr>
</tbody>
</table>
The sample examined in for the CA ponderation (table 18 and 19) comprehends all the observations which had grades in all the Driver Factors analysed (in total, removing the missing data 1735 Offshoring projects).

In table 20, the outcome average grade ponderation through the CA analysis is summarized.

The Efficiency outcome factor average grade was raised from 3,64 to 4,15 (14% growth) confirming that firms are obtaining high and consistent improvements in the overall efficiency of the offshored function. The CA pondered result, however, gives important results since is highlight a greater confidence in the interviewee’s answers. The firms are improving quite convincingly their efficiency. Such result demonstrates that the main driver (labour cost reduction) is generally consistent with the project implementation and results.

The Organizational Flexibility outcome factor has also raised meaningfully its average grade, changing from 3,70 to 4,42 (+20%). Such result is significant since the Organizational Flexibility was generally perceived more improved than the Efficiency from the interviewee. Since the Organizational Flexibility did not appear as a main driver towards offshoring this result is quite surprising. The possibility to move the function performing and to mix it between different countries (when the function is performed in more than one location) gives different possibilities to make its internal structure more flexible according to the needs and external factors (markets volume to be served, desired service level, labour cost, product mix, etc.). The result is important also because it did not appear to be so significant from the literature review and the previous analysis of the database, adding another aspect to the phenomenon analysis. From a Back/Reshoring perspective such factor may make firms reluctant to backshore (because this would cost the loose of flexibility advantages) but, on the other hand, may encourage relocations in other different countries resulting in an additional factor to drive reshoring projects such as nearshoring.

Access to New Market’s average grade dropped from 2,62 to 1,43. Accordingly with the result of the related driver factor (which had its average grade reduced from 2,57
to 1,05) this ponderation shows that the offshoring capabilities to be an instrument to enter new markets its undervalued and not pursued. This also shows an untapped potential contribution of Back/Reshoring, that should driver manager consider if there is a potential to be used in this aspect.

The Product Innovation outcome factor grade has been reduced from 2,50 to 1,43 (-43%). The change is significant because the grade moved from a grade close to “uncertainty” (3 grade in the Likert scale) to a “not agree at all” area. The product innovation capability of the firms was not improved through offshoring. Concerning Back/Reshoring the result shows that, for the firms that have an high innovation component in the offshored function (eg. R&D functions that are being offshored with positive trend according to Jensen and Pederson, 2011) may improve such corrective projects and relocate again because of innovation ineffectiveness of the offshored function. As a possible cause of Back/Reshoring the finding adds an element to the previous analysis and the paper review part of this work. Mistaken innovation capacity evaluation is a factors towards which the attention of the professionals evaluating offshoring should be focused. In addition, it is important to evaluate the impact on such factor where choosing the country toward which Back/Reshore.

The Competitive Pressure outcome factor has also raised meaningfully its average grade, changing from 3,72 to 4,72 (+27%). This average grade confirm the Competitive pressure as the most important and positive outcome from offshoring processes, result in a very low probability to Back/Reshoring short-term correction initiatives due to Competitive Pressure unsatisfying reduction. On the other hand, this aspect may cause many Back/Reshoring project in cases in which the new situation may allow the firm to improve again its competitiveness by moving the activities in a different country or back “home”, this is aligned with the second school of thoughts that sees reshoring decisions as mid- or long-term reactions to changes in the local environment (Dachs and Kinkel, 2013; Gales, 2008 and Kinkel, 2014). From a managerial point of view it is important to observe that the possibility to adapt to the best competitive
scenarios in the best countries is a determinant aspect that has to be pursued with Back/Reshoring.

Table 20: Outcome factors average grade comparison with the CA pondered average values.

<table>
<thead>
<tr>
<th>Outcome Factors</th>
<th>Weighted Avg</th>
<th>CA Pondered Avg</th>
<th>Δ Delta</th>
</tr>
</thead>
<tbody>
<tr>
<td>Efficiency</td>
<td>3,64</td>
<td>4,15</td>
<td>14%</td>
</tr>
<tr>
<td>Organizational flexibility</td>
<td>3,70</td>
<td>4,42</td>
<td>20%</td>
</tr>
<tr>
<td>Access to new market</td>
<td>2,62</td>
<td>1,45</td>
<td>-45%</td>
</tr>
<tr>
<td>Product Innovation</td>
<td>2,50</td>
<td>1,43</td>
<td>-43%</td>
</tr>
<tr>
<td>Competitive pressure</td>
<td>3,72</td>
<td>4,72</td>
<td>27%</td>
</tr>
</tbody>
</table>

Table 21: Average confrontation analysis result proving the difference in the average grades between the simple average grade and the CA pondered average grades of the Outcome Factors in table 5.

<table>
<thead>
<tr>
<th>Variable</th>
<th>N</th>
<th>Mean</th>
<th>StDev</th>
<th>T</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>D</td>
<td>1843</td>
<td>0.0022482</td>
<td>0.186885073</td>
<td>0.32</td>
<td>0.035</td>
</tr>
</tbody>
</table>

The sample examined in for the CA ponderation (table 18 and 19) comprehends all the observations which had grades in all the Outcome Factors analysed (in total, removing the missing data 1843 Offshoring projects).
3.6 Variance analysis
To deep dive how the offshoring results may change in different conditions, a variance analysis was performed. The idea was to investigate in which conditions the offshoring outcomes may be the lowest, in such conditions the possibility to have a back/reshoring project are higher.

Since it was difficult to obtain an acceptable p-value for normality of the dataset, to perform the following analysis, a new variable was introduced which allowed to obtain good normality and to perform the analysis of the variance and the following Anova models. In fact, these analysis require the normality of the data as initial hypothesis for applicability. The new variable consists of a ponderation of the savings achieved with the employees being offshored during the initiative:

\[ \Delta \text{Efficiency} = \frac{\text{Savings achieved}}{\text{employee offshored}} \]

The normality of such variable was investigated with a Shapiro-Wilk normality test that produced a p-value of 0.005118, giving high confidence on the data normality. The variable was created to investigate the variance of the ability of the initiative to allow firms to perform efficiency improvements. More specifically, this variable allowed to measure the savings obtained in proportion to the size of the function object of the offshoring. To study the back/reshoring, in fact, the basic starting point can be the analysis of what the companies are obtaining with the offshoring in order to investigate in which cases they will more likely relocate or repatriate the function due to ineffective efficiency and cost saving performances. The reason this variable was adopted was also that in the earlier analysis it was found that 74% of the companies were choosing the location mainly to cut costs (savings-oriented cluster in the two way clustering in location variables, see figures 5-7) and the 71% of the companies named reduction of labour costs as 4 or 5 out of 5 importance factor as driver towards offshoring (savings-oriented cluster in the two way clustering in drivers variables, see figures 8-10). In order to investigate the behaviour of the efficiency seeker firms such variable was chosen as good proxy of such companies orientation. The good results in normality tests allowed a more confident use of the following statistical analysis. Plus, as shown in the CA analysis of the Outcome (see figure 9) the efficiency on of the most important improvements and is also aligned with the drivers and location factors since they both privilege the labour cost (and other costs) reduction.
From this previous exploratory analysis it is possible to see that smaller firms are obtaining the best cost reduction advantages from back/reshoring. Consequently, this firms are less likely to perform back/reshoring caused by negative cost reduction and efficiency improving results of their offshoring projects. In figure 19 Bonferroni 95% confidence intervals of the difference of the average Savings/Employees values between firms with different sizes are represented. It suggests similar but more complete results. The small companies are performing better savings then mid-sized and large firms compared to their size (measured with the number of employees). In a similar way the mid-size firms are having better outcomes then large companies in the same KPI. This suggests that in similar conditions the smaller the company the better the efficiency improvement throughout offshoring, the less likely the firm will resort to back/reshoring.
Figure 19: Bonferroni 95% confidence intervals of the difference of the average Savings/Employees values between firms with different sizes.

A first focus was on the destination country. Evaluating the host countries it comes straight forward, analysing the Bonferroni confidence interval (95%), that the region which has allowed to obtain the best results has been China. Figure 20 represents the average value of the variable in the different regions, as showed China allowed companies to have 2 times the efficiency improvements compared to the average overall. This confirms, hypothesis 1, the size of the company influences the outcome performances of the offshoring projects.
The obvious conclusion is that the same offshoring project would probably perform better if the host country chosen is China. Furthermore, since the most important driver and evaluation KPI is efficiency (related to labour cost), as it was shown in figures 9 and 11, it is less likely that an offshoring project will cause back/reshoring if the host country is China. On the other hand, projects located in US, India or West Europe are less performing on this side and that might cause a more probable back/reshoring due to unsatisfying efficiency improvement and cost reduction results. Concentrating on figure 19 it is possible to see that China is the only regions which has 3 significant Bonferroni intervals, meaning that is the only country that (from such analysis) was significantly better performing in this specific KPI with significant statistical relevance.
This means that, since the most common goal with the offshoring savings on labour in particular, according to the first school of thoughts which interprets the back/reshoring as a revision on the offshoring project after 3-5 yeas (Kinkel and Maloca, 2009, see 5.3.1 paragraph), companies relocating in China are less likely to evaluate negatively their strategical decision. Because of that, companies that relocated to China are less likely to perform back/reshoring due to dissatisfaction in efficiency performances.

The second analysis was implemented on the industries involved in the offshoring processes. The objective was to investigate which sectors are performing the best improvements in efficiency and the sectors which are the most efficiency-oriented. Similarly to the previous analysis figure 13 and 14 are representing respectively the average value of the KPI for the industries and the Bonferroni intervals on the kpi values. The industries which have performed negative deltas in terms of efficiency are FBI (Finance services, Banking, Insurance), AERDEF (Aerospace and Defence) and, slightly, Telecommunications. The industries which had the best results are Transportation & Logistics and Biotech & Pharmaceutical. Figure 21 shows, in fact, that while IT, Manufacturing, Professional Services, retail and Consumer Goods and telecommunication are not excelling nor performing particularly below average, Transportation and Logistic industry is performing, on average, twice better that the
others while Finance, Banking and Insurances are performing 2 times worst than the average.

*Figure 22: Average performance of different industries (regardless of host region and function being offshored).*

The following figure 23 studied the statistical significance of figure 22 results. The outcome is that Aerospace & Defence and Transportation and Logistic are performing better than the other sectors with 95% confidence while Finance, Banking and Insurances is, with 95% confidence, performing worst than average among all industries.
Again, from a pure cost perspective, it is possible to note that FBI (Finance services, Banking, Insurance), AERDEF (Aerospace and Defence) and TRANS (Transportations and Logistics) are the industries in which the cost reduction and efficiency improvements lacked the most. For this reason, the back/reshoring as a short-term revision on the offshoring project (cause by insufficient results in is more likely to happen in these industries that the others.
3.6.1 Anova Model

After these two preliminary analysis an Anova complete model was implemented to study the way 3 important factors are influencing the efficiency differential obtained with the offshoring. The purpose of the analysis was to study in which case and combinations of these factors the company is more likely to be unsatisfied of the initiative and thus will perform back/reshoring this means to investigate offshoring outcomes to see in which cases the opposite decision (back/reshoring) is more likely to happen. The factors the effect on the efficiency of which was studied are:

- Industry
- Host region
- Company size (number of employees)

Figure 24: Anova complete model.

<table>
<thead>
<tr>
<th>Anova Model</th>
<th>DF</th>
<th>Sum Sq</th>
<th>Mean Sq</th>
<th>F value</th>
<th>Pr (&gt;F)</th>
</tr>
</thead>
<tbody>
<tr>
<td>region</td>
<td>6</td>
<td>158,3</td>
<td>26,39</td>
<td>11,948</td>
<td>1,71e-12 ***</td>
</tr>
<tr>
<td>ind comp</td>
<td>8</td>
<td>486,7</td>
<td>60,84</td>
<td>27,548</td>
<td>&lt; 2e-16 ***</td>
</tr>
<tr>
<td>size</td>
<td>2</td>
<td>335,0</td>
<td>167,51</td>
<td>75,850</td>
<td>&lt; 2e-16 ***</td>
</tr>
<tr>
<td>region:ind comp</td>
<td>36</td>
<td>109,7</td>
<td>3,05</td>
<td>1,379</td>
<td>0,0744</td>
</tr>
<tr>
<td>region:size</td>
<td>12</td>
<td>109,7</td>
<td>3,05</td>
<td>1,379</td>
<td>0,4733</td>
</tr>
<tr>
<td>ind comp:size</td>
<td>13</td>
<td>98,0</td>
<td>7,54</td>
<td>3,413</td>
<td>4,69e-05 ***</td>
</tr>
<tr>
<td>region:indcomp:size</td>
<td>23</td>
<td>79,0</td>
<td>3,43</td>
<td>1,555</td>
<td>0,0495 *</td>
</tr>
<tr>
<td>Residuals</td>
<td>466</td>
<td>1029,1</td>
<td>2,21</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The model is taking into account also the interaction between the variables (complete model), later on the non-significant interaction were removed to reduce the size of the model without losing statistical significance. The final model, reduced from all the non-significant interaction is the following:

Figure 25: Anova reduced model summary.

| fit <- aov (bc · region + settore + size + size:settore) > summary.aov (fit) |
|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
|                 | DF | Sum Sq | Mean Sq | F value | Pr (>F) |
| region          | 6  | 158,3  | 26,39   | 11,467  | 4,39e-12 ***  |
| settore         | 8  | 486,7  | 60,84   | 26,440  | < 2e-16 ***   |
| size            | 2  | 335,0  | 167,51  | 72,799  | < 2e-16 ***   |
| Settore:size    | 15 | 110,5  | 7,37    | 3,202   | 4,34e-05 ***  |
| Residuals       | 535| 1231,0 | 2,30    |         |         |
The suggestions derived from such model are:

- The region chosen for the implementation is significant for the efficiency performance but the interaction of the country of destination with the industry and the size of the firm were not significant and thus removed from the model. The effects of the host country variable are then not related with the specific industry or company size, meaning that the results showed in table 21 and 22 do not mandatorily differ between MNEs and SMEs.
- The interaction between the industry and the size of the company is significant instead. This means for instance that the results within the same industry might be different depending on the size of the relocating firm. The two most significant results were the following:
  - Within the FBI industry cluster, the big companies performed negative efficiency deltas while the small firms had positive deltas. Meaning that the smaller the firms is, the less likely the inefficiency resulting from the offshoring will cause the back/reshoring.
  - Within the Transportation & Logistic and Aerospace & Defence sectors (which had the best efficiency improvements, as seen in table 21 and 22) the firms had positive results in which the efficiency was increased significantly. However that average result within the industry was driven by small and medium companies because big firms did not perform positively as well at the others.

3.6.2 Logistic Regression
Another important analysis was performed with the logistic regression. That is why the logistic regression was adopted as the most suitable for the ORN data. The Logit was chosen due to the dependent variable nature. Since the variable (High or Low probability of Back/Reshoring) is dichotomous, the choice of the Logit well adapted to the structure of the analysis.

3.6.2.1 How is cultural distance measured?
Before going into the analysis it is important to focus on the genesis of such Cultural Distance variable, on the formula trough out which it is calculated and the meaning it has in this work. The variable is used to analyse the influence of the national culture between two countries, the purpose for its presence in the database is to contextualize the data in a specific cultural situation that has to be managed. The genesis comes from the Kogut e Singh’s index:
In which:
- \( I_{ij} \) indicates the value of the i-th cultural dimension for the j-th country. All the 5 cultural dimensions suggested by Hofstede are considered (Uncertainty avoidance, Masculinity, Power distance, Individualism and Time orientation. See paragraph 2.4).
- \( u \) indicates the country with respect to which the cultural distance is calculated, the “home” country of the firm.
- \( V_i \) is the variance of the index of the i-th cultural dimension
- \( CD_j \) is the cultural distance (occasionally called also cultural difference) of the country j-th with respect to the reference country.

3.6.2.2 The Model
The efficiency (associated mainly with cost savings) was kept as response variable, good proxy of the satisfactory outcome of the offshoring process from firms point of view and main driver to the offshoring process (see figure 7) and in the location decision (see figure 8). Again, this is aligned with Kinkel and Maloca (2009) and their interpretation of the back/reshoring as correction of previous offshoring projects (see paragraph 2.3.1). The object of the analysis was to highlight the effects of the industry and the host country on the outcomes and consequently on the overall satisfaction degree of the firm concerning the offshoring. The better the results for the specific industry/host region, the less probable a future back/reshoring initiative.

The particular kind of Binomial Classification uses the logistic regression. With this methodology the process classifies with respect to the belonging of the observation to a set or not (that is also the belonging to a set or to his complementary). The logit produces a two-group discriminant function analysis. A multivariate method for dichotomous outcome variables. The test significance is evaluated with Hotelling’s \( T^2 \). The 0/1 outcome is turned into the grouping variable, and the former predictors are turned into outcome variables. This will produce an overall test of significance but will not give individual coefficients for each variable, and it is unclear the extent to which each "predictor" is adjusted for the impact of the other "predictors". To test the overall effect of the factorial variables (host region, industry entry mode) the Wald test was used. The Wald test produces a chi-squared test statistic of the overall significance of the specific factor. Such methodology was used to classify with respect to two
dependent variables which were analysed in two different analysis and that will now be explained (binary response):

- Back/Reshoring probability: unifying two variables of the initial dataset (plan_locback and plan_reloc) a third variable was created. More specifically in the two original ORN variables the company representatives were asked if the firm was prone to relocate the function into another country (not home, which is reshoring) and, in a second question, the company representative was asked if there was the intention to repatriate the function (which is backshoring). The new variable, named “Success”, was meant to collect the intention of the firms concerning a possible back/reshoring initiative. Adopting the first school of thoughts (Kinkel and Maloca, 2009) that was explained to interpret the back/reshoring as a failure of the previous offshoring. The absence of any relocation intention in the company was assumed to be the manifestation of the satisfaction and, perhaps, the success of the offshoring. The answers of the companies were then sum up into “Success” variable with a value equal to 1 in case of “Yes” in one or both questions (meaning dissatisfaction about the offshoring and the intention of relocation or repatriation) and equal to 0 in case of two “No”.

The particularity of this analysis was to have the factorial variables both as dependent variables and predictors. A particular approach was thus used in order to build different curves for the different values of the predictor variable in input (Long, J. Scott, 1997) for instance, the “Region” variable has 10 values from US to China, etc. The logistic regressions were then computed and allowed to estimate the predicted probabilities that every observation (offshoring initiative) has to fall into Successful or not successful categories depending on his intrinsic characteristics such as company size and host country. The predicted probability were then plotted for the different values of the categorical variables (host region and entry mode).

The logistic regression was estimated with a model using the GLM (generalized linear model) function. Then the predicted probabilities were computed and plotted to help the understanding of the model. Predicted probabilities can be computed for both categorical and continuous predictor variables. In order to create predicted probabilities we first need to create a new data frame with the values we want the independent variables to take on to create our predictions.

It is also important to see and measure of how well our model fits the data. This can be particularly useful when comparing competing models. The fitting of the model was evaluated with the AIC. The Akaike information criterion (AIC) is a measure of the relative quality of statistical models for a given set of data. Given a collection of models
for the data, AIC estimates the quality of each model, relative to each of the other models. Hence, AIC provides a means for model selection.

The AIC is founded on information theory: it offers a relative estimate of the information lost when a given model is used to represent the process that generates the data. In doing so, it deals with the trade-off between the goodness of fit of the model and the complexity of the model. The model with the lower AIC better preserves the information and, thus, better fits the data.

This model (illustrated in table 22) was built to investigate if and how the host country, cultural distance and the age of the project (the different between the current year of the survey and the year in which each specific offshoring project was launched) are influencing the probability of “Success”, meaning the predicted probability of having the relocating company satisfied about the offshoring overall. As explained above the satisfaction was measured with future plans of the firms. The contrary, the not successful projects, are those projects for which the company as stated (in the survey) that it is intentioned to relocate the function again in another not specified country throughout back/reshoring. The probability of having a non-successful offshoring project means, then, the probability of having a back/reshoring initiative given certain circumstances in terms of host country, age of the project and cultural distance between home and host country.

Table 1 summarizes the result of the logistic regression performed. It is straightforward to notice the positive estimate value for both cultural distance and time (that also have significant p-values). This mean that with a higher cultural distance and/or an older offshoring project, the probability to have back/reshoring is higher. Concerning the positive correlation between Time and the back/reshoring probability it must be noticed that such result is consistent with the second school of thoughts highlighted in the paper review part of this work, according to which the back/reshoring is not always due to mistakes in the offshoring decision but simply caused by changes in the overall condition of the company itself, the industry and the host country. This obviously makes more likely to have back/reshoring the more time passes by making such kind of changes more likely to happen. This consideration is confirmed by the Logit. The cultural distance is confirmed to be very negative for the offshoring projects, causing back/reshoring. This is consistent with what was suggested by Stringfellow et al. (2007), who explained how the cultural distance influences overall costs affecting the efficiency of the offshored function, particularly through hidden costs. The host country is also confirmed to be a significant factor that affects the overall results, to better understand the respective influence of the countries see figure 24.
Table 22: Summary of the results of the logit with the success variable and, as predictors, cultural distance, time (age of the project) and host region.

|                          | Estimate | Std. Error | z value | Pr(>|z|) | Signif. codes |
|--------------------------|----------|------------|---------|----------|---------------|
| (Intercept)              | -3.20101 | 0.47942    | -6.677  | 2.44e-11 | ***           |
| Cultural distance        | 0.19201  | 0.11095    | 1.731   | 0.0083   | *             |
| Time                     | 0.03521  | 0.01839    | 1.915   | 0.0555   |               |
| Region2                  | 0.10301  | 0.35043    | 0.294   | 0.7688   |               |
| Region3                  | -0.76847 | 0.46974    | -1.636  | 0.1019   |               |
| Region4                  | 0.59368  | 0.39982    | 1.485   | 0.1376   |               |
| Region5                  | -0.03290 | 0.38903    | -0.085  | 0.9326   |               |
| Region6                  | -0.39564 | 0.70285    | -0.563  | 0.5735   |               |
| Region7                  | 1.26500  | 0.64865    | 1.950   | 0.0081   | *             |
| Region8                  | -0.41095 | 0.45456    | -0.904  | 0.3660   |               |
| Region9                  | 0.12623  | 1.09143    | 0.116   | 0.116    |               |
| Region10                 | 1.22362  | 0.73919    | 1.655   | 0.0512   |               |

Null deviance: 433.42 on 1701 degrees of freedom
Residual deviance: 312.15 on 1690 degrees of freedom
AIC: 436.15

Number of Fisher Scoring iterations: 5

The following figure 26 represents the predicted probabilities of success/non-success of an offshoring project in different host regions. The plot uses the predicted probabilities calculated from the data produced by the logit and plots them in a graph with respect to the cultural distance (x-axis) and the predicted probability of success/non-success (y-axis). First of all it is important to notice that the probability of back/reshoring (upper extreme of the y-axis) increases along with the cultural distance. This correlation, motivated by the results showed in table 1, confirms hypothesis 5; the cultural distance increases the probability of negative or not satisfactory outcome from the offshoring project and simultaneously increases the probability of a future back/reshoring initiative.
Furthermore, China, Asia and India are the regions that offer the lowest probability of back/reshoring while Africa, Australia and Middle East have the highest probability of back/reshoring. As practical conclusion, the same offshoring project has more probability to be relocated with back/reshoring if the host region is Australia compared to China (at the same conditions).

Figure 26: Predicted probabilities graph for each host region.
3.7 Deep dive on cultural distance and its correlation with performances

The low importance in the firm’s consideration of such factor (showed in the CA analysis in fig. 7 and 8) coupled with his influence on the offshoring results (showed in the previous logit) and the importance showed in the paper review of the cultural distance as one of the major hidden cost attracted the attention. It was, in fact, deeply analysed that the hidden costs (determinant cause of back/reshoring, see paper review paragraphs and Stringfellow et al., 2007) find in the cultural distance between home and host country one of the most important causes. Furthermore, it was showed that firms are underestimating the importance of such factor (fig. 7 and 8) even if its determining major negative impact that cause back/reshoring and the failure or the need to revise previous offshoring decisions. As previously mentioned, the previous demonstrated the impact of the cultural distance on the back/reshoring probability. To deep dive such aspect a particular focus on such variable enabled further analysis that will now be showed and that will conclude this work.

3.7.1 Clustering with respect to cultural distance.
Plotting the observations, approximately 1700, with the cultural distance on the abscissa axis and the $\Delta Efficiency = \frac{Savings \ achieved}{employee \ offshored}$ the following graph (on the right) is obtained. The Ward agglomerative method was carried out using the euclidean distance. It proved to be the most effective method; such agglomerative solution guaranteed a very high cophenetic coefficient which means a better correlations between the distances matrix calculated with euclidean distance and the cophenetic matrix with the Ward linkage method. The plot shows the concentration of observations in two separate bands of values rather different from each other. Then a clustering algorithm was implemented according to two clusters of firms that have relocated to host countries with respectively low cultural distance (observations represented in blue) and high cultural distance compared to their home country (in red).

Clustering tree resulting from the algorithm.
Figure 27: Clustering tree resulting from the algorithm.

Euclidean-Ward
3.7.1.1 One-Way ANOVA on the “Low cultural distance” cluster.

Once having created two clusters resulting from the above analysis, the study then proceeded to analyse the variance through an Anova model with the purpose of studying the effect of the variable describing the entry mode into the host country on the variable ΔEfficiency. The entry mode differentiate different strategies in the way the offshoring can be implemented. Each solution has different specificities and different Foreign Direct Investments (FDI) requirements in general may be used or avoided in the strategy a firm uses to enter the host region and market. Overall, 5 entry modes were investigated by the ORN database, describing 5 different ways that
every firm has to approach the offshoring. The different ways to enter in the host country market can be summarized as:

- Captive
- Joint Venture
- Outsourcing
  - International outsourcing
  - Domestic outsourcing
  - Local outsourcing

The reason why such factors was taken into consideration is that in different other analysis (not showed in this work to their low overall statistical significance) it was suggested that the entry mode could have been another important factors to determine the output of an offshoring project and, consequently, the back/reshoring conditions. In this case the two clusters were analysed in separated models so that two Anova were implemented one for each cluster. The Anova was executed first on the cluster of firms which have implemented offshoring to countries culturally similar to their home country of origin (low cultural distance between home country home and host country). Then the Anova was implemented on the second cluster containing companies whose have offshored to countries with high cultural distance with respect to their own home country.

The effect of the entry mode into the country is again not significant in the cluster with low cultural distance so that there is no basis for statistical inference about the link between the proxy of the efficiency improvements achieved and the entry mode (see figure 30).

*Figure 29: Summary of the Anova model values values conducted on the low cultural distance cluster.*

|             | DF | Sum Sq | Mean Sq | F value | Pr (>|F|) |
|-------------|----|--------|---------|---------|----------|
| Entrymode   | 4  | 14,8   | 3,696   | 0,99    | 0,413    |
| Residuals   | 304| 1135,1 | 3,734   |         |          |
3.7.1.2 One-Way ANOVA on the “High cultural distance” cluster.

Regarding the second cluster the results were very different. As shown by the model info represented below in figure 22 the very low p-value of the variable "entry mode" in the model means that there is statistical evidence to state that there is correlation between the entry mode and outcomes (efficiency). Thus placing the focus on the method chosen by the companies to enter in countries where the cultural distance compared to their country of origin is high.

*Figure 30: Summary of the Anova model values conducted on the high cultural distance cluster.*

| DF   | Sum Sq | Mean Sq | F value | Pr (>|F|) |
|------|--------|---------|---------|----------|
| Entrymode | 4      | 79,8    | 19,942  | 6,298    | 7,94e-05 *** |
| Residuals | 231    | 731,5   | 3,167   |          |            |

The conclusion straightforward is that when the cultural distance is high the treatment "entry mode" (or offshoring strategy) is highly significant. It can be deduced that the importance of the choice of the entry mode (Captive, Joint Venture, Local outsourcing, Domestic outsourcing, International outsourcing) is crucial the more the cultural distance is high because bigger is the impact on the outcome of the initiative. Concerning back/reshoring it can be deduced that the higher the cultural distance the more the wrong entry mode can cause the failure of the offshoring project ending up into back/reshoring to corrects such decision.

To see more in details the results of the model they were valuated with 95% confidence intervals of the differences between the average values of the variable \( \frac{\text{Savings achieved}}{\text{employee of\,shored}} \) for the different entry modes available. That was done to investigate which entry modes were producing the best results under high cultural distance condition and which entry modes are less likely to produce positive results and, therefore, more likely to cause back/reshoring. It can be seen from the 95% confidence intervals in figure 32 that the capital intensive solutions (Captive and Joint Venture) are less effective that the various forms of outsourcing analysed. More specifically, the domestic outsourcing seems to be the most productive entry mode when a company starts and offshoring project into a country that has high cultural distance with its home country. Regarding back/reshoring, when firms are performing highly capital intensive entry modes (high FDI) the back/reshoring becomes more probably. This still considering the efficiency (associated mainly with cost savings) as
good proxy of the satisfactory outcome of the offshoring process from firms point of view and main driver to the offshoring.

Figure 31: Representation of 95% confidence intervals on the average difference in efficiency improvements between different entry mode solutions. In the significant intervals (not containing the 0), the best performing entry mode is highlighted in green while the worst is indicated in red.

Summarizing the conclusions on such analysis on the offshoring mode on the efficiency improvements the key evidences found were the following:

• The choice of the mode of offshoring is not very relevant in situations where the cultural distance between the company’s home country and the host country/region is low. The probability of having a back/reshoring project does not change according to the entry mode under these conditions.

• Savings are strongly related to the type of offshoring when the cultural distance between home country and the host country/region is high.

• In these cases (high cultural distance) it is preferable to avoid the sunk costs of the solutions Captive and Joint Venture and orientate the strategy towards less invasive solutions as Domestic and Local outsourcing. More specifically, as shown by the confidence intervals in figure 33, Domestic and Local outsourcing were significantly better performing than Captive, Joint Venture and International outsourcing solutions.
4 Conclusions

The analysis have shown that there are two main type of offshoring behaviours within the ORN database concerning location decision. The cost-oriented firms are mainly looking to improve the efficiency of their production while synergies-oriented firm to co-locate functions abroad and to get closer to the customers. But this clustering suggests that firms may not implement back/reshoring strictly due to unsatisfying cost reductions. The synergies-seeking cluster firms more probably might back/reshore in case of change of global strategy or change in overall conditions that may push them to relocate all the offshored functions, co-located in the same host country. This is consistent with the second school of thought found in the paper review paragraphs. According to such conception, firms back/reshore not only due to previous mistakes but also due to changes in the host country or general economic changes. Kinkel (2014) estimates that 20% of total German companies’ reshoring decisions are mid- or long-term reactions to changes in the local environment. Firms belonging to synergies-seeking cluster have tried to improve the value chain synergies that is another critical element in offshoring success. This may not always be accomplished, giving raise to back/reshoring. Another possible, and different from what may drive cost-oriented firms towards back/reshoring, is that the advantages of reduced distance to the market and the presence closer to the customer might not be aligned with expectation. This may cause short or mid-term corrections throughout back/reshoring.

Similarly, the driver factors analysis pointed-out that two main currents can be defined by the reasons behind the offshoring. Coherently, a different orientation towards offshoring correspond to very different reasons and causes to back/reshoring. While cost-oriented firms will likely back/reshore in case of changes in the economical convenience of the host country itself, the market oriented firms’ back/reshoring will more likely correspond to disappointing results in the new market. In case the outcome from the new market entry and time to market reduction may cause changes in the global expansion strategy and cause a back/reshoring. In this case back-shoring seems a more suitable options since the firm may simply repatriate the functions renouncing on the expansion in that specific market/region.

Analysing the sizes of the firms and their efficiency improvement results it was found that the smaller companies obtained better efficiency improvements related to their dimension. The intuition is that smaller companies, performing better efficiency improvements, are less likely to perform back/reshoring cause by unsatisfactory performance improvements.

Between the different countries, China has allowed firms to dramatically improve the efficiency making back/reshoring to correct such project less probable. On the other hand, offshoring in the US was definitely lower performing in this regard; meaning that
back/reshoring to correct a disappointing efficiency improvement are more likely to be performed in these cases. The short-term corrections (back/reshoring according to Kinkel and Maloca, 2009, see 5.3.1 paragraph) are more likely if the same project is carried out in US, India or West Europe compared to China.

Similarly, between the different industries there are those for which it is more probably to see short-term corrections through back/reshoring then others.

The logistic regression showed that the cultural distance has strong influence on the probability of back/reshoring. The higher the cultural distance, the higher to probability of back/reshoring in the same conditions. The age of the projects also has a decent impact on the overall back/reshoring probability. The older the project (higher value for the variable Time, the more probable the back/reshoring. The Logit also confirmed different conditions for the various countries involved, with China constantly the best performing country involving the lowest probability of back/reshoring. On the other hand, Africa and Australia have been highlighted as the countries that have the highest probability of back/reshoring.

A deeper focus was then directed on the cultural distance, clearly underestimated by firms during the decision process (see figure 10 and, in general the location and driver factors CA analysis) but proven as critical for its impact on the back/reshoring probability. It was highlighted that in case of offshoring into an host country with high cultural distance from firm’s home country the entry mode (another strategical decision during offshoring) can highly determine the efficiency improvement results and, perhaps, the possibility of future back/reshoring. The outsourcing solution, in this cases, have been prove to offer better results and reduce the need for future back/reshoring as short-term correction initiatives. Along them, the domestic outsourcing offered the best performances.

From the CA ponderation of the average grades (see paragraph 6.10) it was noted a significant change in the factor grades. For this reason the CA analysis might be used, in future researches, as starting point from adjust the Likert data and then use them into other statistical analysis such as regressions. Compared to the analysis that were done so far without such considerations, the data were less reliable (see..) because they did not took into account the subjectivity of the interviewee as well as the interpretation of the survey and the intrinsic point of view of the specific question in the survey. The result from analysis that had pondered their data from these effects will be more realistic and trustable (see figures 16-21).
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