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**Responsiveness, the primary reason behind re-shoring
manufacturing activities to the UK: an Indian industry
perspective**

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Responsiveness, the primary reason behind re-shoring manufacturing activities to the UK: an Indian industry perspective

Purpose: Due to today's volatile business environment companies have started to establish a better understanding of the total risk/benefit-balance concerning manufacturing location decisions of their component supply. The focus is now much more on comprehensive and strategic supply chain issues rather than simply relying on piece part cost analysis. This has led to an emerging trend called re-shoring. The aim of this paper is to understand the primary motivation behind the re-shoring strategy in the UK and investigate the factors that influence this decision from Indian industries perspectives.

Design/methodology/approach: The analysis of the paper is based on interviews conducted in the UK and India (State of Tamil Nadu) in various industries including automotive, industrial goods, textile, and marine. For this purpose an interview framework based on key enablers identified from the literature, being IT solutions, manufacturing equipment and human factors. This provided an assessment of the capability of the companies for being responsive to western demand.

Findings: The findings indicate that re-shoring to the UK is the result of inadequacy in responsiveness and long production lead-times of the Indian suppliers. The outcome of this paper indicates that the top factors behind this inadequacy in responsiveness are logistics and transportation, electricity shortage, excessive paperwork and working attitude.

Originality/value: This paper aims to fill the gap in the re-shoring literature by providing a clear picture behind the reason for re-shoring in the UK and identify the drivers behind this shortcoming in the component supply from India.

Key Words

Re-shoring, Off-shoring, Responsiveness, Location Decisions

Introduction

In today's manufacturing environment location decisions for both OEMs and suppliers is considered to be core to business strategy. Companies are required to have a supply chain and business intelligence strategy designed to make the best total value decision (Tate *et al.* 2014). For over two decades, developed countries have been offshoring their manufacturing activities to the low cost countries such as China and India (Lewin and Peeters 2006). Initially the migration of these industries was solely with the purpose of reducing production costs in order to gain competitive advantage. This often overlooked what could be considered secondary level factors such as supply chain reliability issues in respect of time and quality (Fratocchi *et al.* 2014; Harrington 2011; Arlbjørn and Lüthje 2012). Despite the scale of offshoring strategies implemented every year, results from surveys showed lower success rates than what was expected initially (Herath and Kishore 2009). As a result in recent years, there has been a decline in offshoring (Bals *et al.* 2013) and it is evident that some multi-national companies have decided to re-shore parts of their manufacturing activities to their home countries (Bailey and De Propriis 2014). According to Koh *et al.* (2007), "the globalization and intensive world-wide competition along with the technological advancements create an entirely new business environment for the manufacturing organizations". In addition to this, the intensity of the global competition for customer satisfaction has made the customer-supplier relationship management more important than ever before (Choy *et al.* 2003). Tate (2014) suggests that the proximity to the emerging population of customer can be the motives behind the "shoring" decision. These indications have led to emergence of new trend called "re-shoring" in countries such as Germany, France, UK and USA (Bailey and De Propriis 2014; Ellram *et al.* 2013; Fratocchi *et al.* 2013; Kinkel and Maloca 2009; Gray *et al.* 2013).

The re-shoring trend has received considerable attention in the UK with the Prime Minister of the UK calling the UK the "re-shoring nation" at the world economic forum in Davos Switzerland (Groom and Parker 2014). In order for the government to adopt the same horizon to support the new movement in terms of policymaking, energy cost and supply of skills, re-shore UK was established. This was launched in a collaboration between the UK Trade and Investment (UKTI) and the Manufacturing Advisory Service (MAS) resulting in a one-stop-shop service to help industries to return their production back to the UK (Gov.Uk 2014). This indicates the significance of re-shoring and how UK is supporting its industries to bring back their manufacturing activities. According to the report published by Business Birmingham (2013), 41% of the respondent studied in this investigation, has stated that the UK has become a more attractive option for manufacturing companies in comparison with other locations. This is further supported by the UK government report indicating that one in six companies has re-shored parts of their production back to the UK since 2011 (EEF 2014; Gov.UK 2014). However despite the significance of re-shoring in the UK and the momentum in research related to macroeconomic analysis of re-shoring, challenges associated with the operational aspect still remain sparse.

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3 This paper starts by addressing an initial research question that aims to understand the
4 primary reasons behind re-shoring phenomenon in the UK. A review of current literature and
5 statistics published in government reports was then further enhanced through interviews of
6 six organisations which include an Indian owned British OEM in the automotive sector, two
7 governmental organizations promoting re-shoring in the UK, two consultancy services that
8 have been closely involved in consulting re-shoring projects in the UK and an educational
9 organisation which hosted the 2015 UK National Manufacturing Debate with the theme of re-
10 shoring. This provided both an informative setting on the areas where the UK supply chain
11 could enhance the supply capabilities in support of re-shoring companies. These interviews,
12 together with the understanding developed from the literature formed the basis for the
13 direction of research developed in this paper.
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18 India is one of the most important low-cost countries where western supply chains have
19 migrated to. Once the key factors for re-shoring had been identified in the UK, this was then
20 used as a basis for the investigation among Indian industries. Thus the second research
21 question was to investigate the factors behind re-shoring, found from research question 1,
22 from an Indian industry perspective. In other words the second part of this research focuses
23 on what the short comings in the supply chain are in Indian industries that lead to re-shoring
24 in the UK. The data collection for this part was carried out during the author's visit in India
25 and collaboration with Coimbatore Institute of Technology (CIT) in the state of Tamil Nadu,
26 India. The outcome of this paper is based on interviews conducted within 11 Indian industries
27 in various sectors.
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31 **Re-shoring**

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33 Investigation into the concept of re-shoring has gained considerable momentum in recent
34 years (Kinkel and Maloca 2009). A number of scholars have explored this phenomenon in
35 different countries including USA, Germany and UK. A study conducted by Tate *et al.* (2014)
36 states that 40% of 319 US based companies who had already been involved in offshoring
37 activities, perceived a trend towards re-shoring in their industries. It is evident that previously
38 businesses have looked at their location decisions in too static a manner: generally ignoring
39 the possibility of the long-term changes such as the rise in labour and fuel costs and change in
40 customer demand (Tate *et al.* 2014). According to Wilburn and Wilburn (2011) the
41 offshoring decisions were made based on piece-part cost reduction whilst assuming the
42 competitive advantage would remain the same in future. It was identified that this could lead
43 to risk of long term misjudgement in respect of manufacturing location decisions (Kinkel
44 2012). As a result the re-shoring phenomenon has emerged which Gray *et al.* (2013) defined
45 as "bringing manufacturing back home". However due to the immaturity of the concept,
46 several other names have been applied in the existing literature such as "on-shoring", "back-
47 shoring, "home-shoring", "re-distributed manufacturing" and "repatriating manufacturing"
48 (Kinkel and Maloca 2009; Fratocchi *et al.* 2013; Foerstl *et al.* 2016). A more comprehensive
49 definition for re-shoring was given by Fratocchi *et al.* (2014) which defines it as "A voluntary
50 corporate strategy regarding the home country's partial or total relocation of (in-sourced or
51 out-sourced) production to serve the local, regional or global demand".
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3 It is evident in the literature that reversing the offshoring decisions is not necessarily a new
4 phenomenon. There have been number of studies conducted under various titles such as de-
5 internationalization and international divestment. Benito and Welch (1997) define de-
6 internationalization as any activities, voluntary or compulsory, that decrease a company's
7 engagement in present cross-border activities. The notion of international divestment
8 emphasized the reduction in level of ownership on a company's direct foreign investment
9 regardless of how voluntary these decisions were (Boddewyn 1979). However these concepts
10 of de-internationalization and international divestment, lack some of the key features of re-
11 shoring such as outsourced production. In addition these studies do not particularly consider
12 the relocation of facilities back to the home country.
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17 An alternative term used to refer to re-shoring is "back-shoring" which was coined by Kinkel
18 and Maloca (2009). In this study "back-shoring" is defined as process of returning full or part
19 of the production from fully owned facilities in foreign location or a foreign supplier to the
20 company's domestic site. Unlike studies completed by other scholars, Kinkel and Maloca
21 (2009) believe "back-shoring activities are predominantly a short-term correction of prior
22 misjudgement in offshoring decisions rather than long-term adjustment to changing
23 conditions at the foreign location". This investigation was carried out based on the data
24 gathered from German Manufacturing Survey 2006 (Fraunhofer Institute of System and
25 Innovation Research). The study did not specify whether the re-shoring strategies were forced
26 by external commercial circumstances and were thus "involuntary" strategies or whether they
27 were voluntary decisions taken proactively to optimise commercial opportunities. To address
28 this shortcoming in the re-shoring definition, Fratocchi *et al.* (2014) proposed a more
29 complete definition in which re-shoring/back-reshoring is defined as "a voluntary corporate
30 strategy regarding the home-country's partial or total re- location of (in-sourced or out-
31 sourced) production to serve the local, regional or global demands".
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38 **Methodology**

39 Scholars have traditionally adopted quantitative approach such as mathematical modelling
40 and surveys to investigate issues related to supply chain management (Golicic and Davis
41 2012; Sachan and Datta 2005). In recent times, qualitative research has received more
42 attention by European researchers (Taylor and Taylor 2009; Spens and Kovács 2006;
43 Tachizawa and Thomsen 2007; Koste *et al.* 2004). However there still remains a lack of
44 qualitative studies on the manufacturing aspects of the re-shoring phenomenon. Due to the
45 immaturity of the subject within the academic context and limited practical application of re-
46 shoring at the industrial level, it was recognised by the authors that an in-depth approach was
47 required, from a selected population of interviewees, to facilitate access to reliable
48 information. Since the underlying dynamic of re-shoring phenomenon in the UK is still not
49 well understood, qualitative research methods were selected to fill the gap in the literature.
50 According to Golicic and Davis (2012) in situations where the phenomenon of interest in new,
51 dynamic and complex and a detailed description of the problem is required, qualitative
52 research is a preferred method.
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3 For the purpose of this study, semi-structured interview were conducted in various industries.
4 The investigation started by identifying data sources that were in the forefront of the re-
5 shoring topic in the UK, mainly the study of UK government reports (EEF 2014). As a result
6 of this, six organisations in the UK were identified that were at the core of the re-shoring
7 movement. After establishing contacts, six interviews were performed with the purpose of
8 determining the main motivational reasons, from a manufacturing point of view, for UK
9 industries to re-shore their production activities from low labour cost countries back to the
10 UK. These organisations include an Indian owned British OEM in automotive sector, two
11 governmental organizations promoting re-shoring in the UK, two consultancy services that
12 have been closely involved in consulting re-shoring projects in the UK and an educational
13 organisation which hosted the 2015 UK National Manufacturing Debate with the main
14 subject of re-shoring
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19 Following the initial investigation in the UK the focus of research was transferred to India.
20 The selected sample for the second part of this investigation consisted of Indian
21 manufacturers involved in supplying parts to Europe. The investigation involved focusing on
22 the bottlenecks in the responsiveness of the Indian suppliers. For this purpose the chosen
23 sectors were the industries operating in a high demand uncertainty environment where lead-
24 time plays an important role. Once the target companies were identified, contacts were made
25 through the Coimbatore Institute of Technology. As a result 11 interviews were performed in
26 11 different companies each taking between 1-1:30 hours. The analysis was carried out
27 through manual coding and thematic analysis in order to identify the most repetitive patterns
28 within their operations.
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32 The companies were 1st and 2nd tier suppliers in mainly automotive, textile, industrial
33 machinery and marine industries. The profile of the companies interviewed is listed in Table
34 1. For this data collection a highly ranked informant was selected who has an in-depth
35 knowledge of supply chain management and issues related to overseas supplies. Each
36 informant was contacted separately prior to the interview date, provided with the range of
37 questions that needed to be answered. Once they were confidence in answering them, the
38 interview appointments were arranged. The data collection from both UK and India were
39 conducted separately in 2014-2015 and were all in English. The next section of this paper
40 provides the details about the framework of the interviews.
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47 **Please Insert Table 1 About Here**
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51 **Supply chain responsiveness** 52

53 When interviewing the organisations in the UK, the main objective was to identify the most
54 important supply chain issues that UK industries experienced when collaborating with Indian
55 suppliers which influenced their decision to re-shore. Table 2 provides a summary of the
56 findings from the interviews and presents a series of bullet points to provide an indicative
57 summary of the overall motivations behind re-shoring to the UK.
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3 The primary factor that emerged from the interviews concerned responsiveness. This mainly
4 emphasised lead-time reduction since it appeared repeatedly as one of the top reasons behind
5 re-shoring in each individual interview. However other factors such as quality improvement,
6 logistics cost reduction, customer satisfaction and better communication in the supply chain
7 were among the other reasons behind re-shoring. Findings also showed the proximity to the
8 end customers, faster delivery, and shorter lead times are the vital elements for the businesses
9 serving the domestic market in the UK. This is also aligned with the findings from the report
10 published by EEF (2014) which indicated that 93% of companies felt that as the time passes
11 the responsiveness to customer demand is becoming the major challenge in their businesses.
12 Depending on the demand characteristics, firms competing in a market where customer
13 demands are highly unpredictable need to be more responsive to the these changes and to
14 collaborate more closely with other supply chain members.
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25 These findings from UK companies also aligned with the literature. It is recognised that
26 companies are no longer competing on an individual bases but require to be fully integrated
27 with their supply chain to fulfil a mutual goal (Lambert and Cooper 2000). The research on
28 supply chain responsiveness has been going on for more than a decade (Holweg 2005; Li *et al.*
29 2006). Since the early 1990s, companies have come to realise the significance of aligning
30 their business strategies with their upstream and downstream activities (Kumar *et al.* 2006). It
31 is evident that the capability to react to changes in customer demand is an important
32 determinant of competitive advantage (Squire *et al.* 2009).
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35 36 Research in India

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38 After conducting the literature review on the concept of supply chain responsiveness and the
39 first series of interviews in the UK, the framework for the interview in India was developed.
40 It focussed on investigating the three factors that were considered to be the key enablers of
41 responsiveness in the companies namely information technology solutions, manufacturing
42 equipment and human factors. The interview guide was structured around these three factors.
43 The insight gained from the interviews is expressed in Figure 1 which indicates that the
44 responsiveness can be achieved by utilization and integration of these three strongly linked
45 factors. In the context of these three key enablers the Indian companies were interviewed to
46 capture the overall picture of the issue on supply chain and assess their capability for being
47 responsive towards the demand in western countries. The next section provides a brief
48 explanation on how these three factors can help companies to be more responsive.
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55 **Please Insert Figure 1 About Here**

56 *IT solutions*

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3 Today the influence of IT solutions on supply chain management is unprecedented. This is
4 evident in the way that the data exchanges among companies are carried out. The linkage
5 between them has been transformed in comparison to how it was done traditionally (Plamer
6 and Griffith 1998; Arlbjørn and Lüthje 2012). IT can be utilized to establish partnerships for
7 more effective and efficient supply chain systems (Choy *et al.* 2003; Waller and Fawcett
8 2013). The IT solutions can be in various forms ranging from mobile telephone
9 communications and emails to electronic data interchange (EDI), customer relationship
10 management (CRM), intranet and extranet, and direct links-up with suppliers (Quayle 2002).
11 These technologies facilitate the collaborative planning among the suppliers and allows real-
12 time information sharing such as demand forecasts and production schedule for supply chain
13 decision making (Kumar *et al.* 2006). As it is shown in Figure 1, the absence of IT as one of
14 the three enablers of responsiveness can lead to poor communication and lack of integration
15 and transparency. According to Choy *et al.* (2003) “the rapid advance in IT is now deployed
16 not only to improve existing operational effectiveness of a business, but also to build the new
17 capability to meet today’s business environment and complexity”. Once the IT tools are in
18 place the paper transactions are significantly reduced and it also leads to shorter order cycle
19 times and decrease in inventory level (Prajogo and Olhager 2012; Quayle 2002).
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25 *Human factors*

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27 According to Kumar *et al.* (2006) the first phase in achieving manufacturing flexibility and
28 becoming more responsive to customer demand relies on the responsibility of the senior
29 management in identifying the specific aspects of responsiveness and focusing on the areas
30 that can improve the competitiveness in terms of product range and speed. The absence of
31 this factor can result in lack of right management support and skilled workforce which can
32 ultimately reduce the company’s responsiveness. Hence human factors can be divided into
33 two parts. The first part is in relation to the responsibilities of the management team in the
34 company. One of the critical aspects of management strategies towards responsiveness is
35 provision of training and educating the workforce (Backhouse and Burns 1999). Hopp and
36 Oyen (2004) believe that “cross-training can enable shorter lead time quotes and more
37 reliable delivery by reducing the mean and variance of the cycle time (and hence lead time) to
38 produce a product or service”. In other words the adjustment and reconfiguration of the
39 operations to achieve responsive production will only be feasible if there is right culture
40 within which the workforce operates (Duclos *et al.* 2003). Hence training multi-skilled
41 workforce can have a significant influence on the operation performance (Sawhney 2013).
42 The second part of the human factor is about the availability of the workforce (Duclos *et al.*
43 2003; Sawhney 2013). This can consist of the shop floor operators with basic skills to
44 engineers and personnel with specific expertise. According to Bailey and De Propriis (2014)
45 lack of skills in the UK is considered to be one of the limitations that the re-shoring
46 companies are currently facing.
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53 *Manufacturing Equipment*

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55 The last factor to be considered is the re-configurability of the manufacturing equipment to
56 meet the customer demand and shorten production lead-time. The manufacturing system can
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3 be seen as an enabler to meet the emerging customer trends by reconfiguration of assets and
4 operations (Duclos *et al.* 2003). Mehrabi *et al.* (2000) draw a line between re-configurability
5 and agility of the production in which re-configurability does not deal with the entire
6 organisation and instead it focuses on the production system and objective of manufacturing
7 responsiveness. They suggest that the manufacturing systems should be able to be designed
8 rapidly and be adjustable towards production of new products, at the same time its capacity
9 should be modifiable and allow easy integration of new technologies in order to manufacture
10 variety of products with unpredictable demands (Mehrabi *et al.* 2000). The flexibility of the
11 machines is defined as the range of operations that a machine can complete without any
12 major modifications in setup and the operation flexibility is the extent to which a part can be
13 manufactured using different processes (Stevenson and Spring 2007).
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17 Findings

18 *Responsiveness in Indian industries*

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20 According to ATKearney (2014) report, India still remains the first offshoring destination for
21 westerns companies among the other low cost countries. This indicates that India is still
22 increasingly being considered as an attractive option and plays an important role in
23 manufacturing location decision. Selecting South India (Tamil Nadu) as a point of data
24 collection offers a range of benefits concerning its influence in global supply chain. The
25 capital of Tamil Nadu, Chennai is known as the biggest industrial and commercial centre in
26 South India and currently is considered as one of the largest suppliers of components to the
27 European automotive sector. Hence it provides a platform to establish better understanding of
28 quantity, quality and range of products that are being supplied to western industries.
29 According to Make in India (2015) the Indian government is currently taking several
30 initiatives to further support foreign investment, foster innovation, protect intellectual
31 properties and build best-in-class manufacturing infrastructure.
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39 In the preliminary part of the interviews, the interviewees were first introduced to the
40 concepts of re-shoring and responsiveness (focusing on lead-time) and the objectives of the
41 study were clearly defined. The language of some of the questions was simplified in order to
42 make them easier to understand. Having considered the motives behind re-shoring movement
43 in the UK published by EEF (2014), the companies were first asked about some of the
44 potential reasons why western companies are re-shoring their manufacturing. The two factors
45 that were most evident among the rest were the dramatic increase in labour and transportation
46 costs in India which has initiated the steady reorientation of production activities towards the
47 West. This is in line with reasons found in the literature (Fratocchi *et al.* 2013; Ellram *et al.*
48 2013; Gray *et al.* 2013).
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53 Information technology (IT) is considered to be an important facilitator for communications
54 and data exchange between Indian firms and their customers in Europe. This was also evident
55 when the majority of the participant claimed that they are investing heavily in IT to enhance
56 their abilities to manage their information and knowledge in the supply chain. However
57 according to Fawcett *et al.* (2007) the only possible way to utilize IT solutions, is if both
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3 parties are willing to share required information whereas without supporting this, large
4 investments in IT can fail. Therefore this requires firms to communicate their strategic supply
5 chain information and not just transactional data e.g. materials or product orders (Fawcett *et*
6 *al.* 2007). Such level of communication will require great level of trust between the
7 companies. The risk of intellectual properties being exposed to foreign market has been
8 increasingly taken into account when making offshoring decisions (Tate *et al.* 2014; Lewin
9 and Volberda 2011; Casson 2013). Despite having laws to protect the intellectual property in
10 India, confidential data about innovative and new products is still vulnerable to being
11 misappropriated (Ellram *et al.* 2013; Zimmerman 2013).
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16 One of the main bottlenecks in utilization of IT solutions was companies mostly focusing on
17 the technological side of the IT and paying less attention to the organisational culture. This
18 can make the companies unsatisfied with the return on the investment (Soo *et al.* 2002).
19 Hence this raises the issue on the human factors in the organisations. The participants were
20 asked about their approach for training the workforce and providing education for their staff.
21 According to Davis *et al.* (2012) “manufacturing workforce with substantially more advanced
22 training and skills will not only be fundamental but will also be the key competitive
23 advantage as dynamic management and operation of demand-driven product profiles increase
24 and as innovation and faster time-to-market for new products becomes a key economic
25 driver”. The results from the data gathered showed that in recent time much attention has
26 been given in providing right training and introducing educational channels in the Indian
27 companies. All the companies interviewed claimed to adopt some sort of training for their
28 personnel. This ranged from providing simple shop floor skills such as working with the
29 machinery, using internal resources to more advanced engineering skills for quality assurance,
30 lean and agile principles, customer relation management (CRM) and technical support for
31 design. Some of the companies had also a close collaboration with their customers in Europe
32 where they would send staff abroad for training purposes every year. Furthermore, contracts
33 were made with the local universities to provide part time education for the people willing to
34 advance their engineering knowledge.
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42 The education of the workforce and familiarisation with the latest technologies and IT
43 systems also indicates that the implementation time and overall cost of IT will also be
44 reduced by substantial amount as a result of reduction in disruption time and clarification of
45 the long-term benefits (Gaimon *et al.* 2011). Consequently over a course of time this will
46 create an effective and efficient organisational culture which in turn will affect the working
47 attitude of the workforce. The responsiveness of a firm can also depend on availability of the
48 skilled labour in the case of emergencies. This was also raised as one of the issues that the
49 Indian manufacturers were facing in recent years. Depending on the geographical location of
50 the firm, the access to pool of manpower varied. For instance the availability of engineers in
51 South India is not an issue however conversely there is a shortage of skilled manpower for
52 tasks such as shop floor machining and assembly operations. It should be noted that the big
53 companies capitalise on their strong brand image and international reputation, therefore they
54 face fewer difficulties in finding skilled workers than small and medium size (SMEs)
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3 companies. The reason behind such issues is the level of automation utilised in large
4 manufacturing companies that requires less manual work.
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7 Manufacturing facilities were the next area investigated having a substantial influence in the
8 ability to shorten the time involved in manufacture and supply of the product. Companies
9 were questioned on the level of automation used in their production line and the future plan
10 for further investments in manufacturing equipment. Due to the globalisation and volatile
11 market, Indian manufacturers are experiencing a significant transformation from traditional
12 and conventional manufacturing to more intelligent and reconfigurable systems. Results
13 indicate that significant attention has been paid to rapid adjustment of production capacity
14 due to fluctuation in demand in recent years. Large investments are made in flexible and
15 generic machines to accommodate a wider range of products.
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20 21 *Factors affecting the responsiveness*

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23 One of the objectives of this paper is to identify the bottlenecks that prolong the supply of
24 product to western market which has resulted in companies re-shoring production back to
25 their home countries (Fratocchi *et al.* 2013; Gray *et al.* 2013; Fine 2013; Bailey and De
26 Propris 2014). Figure 2 illustrates the top four factors as determined in this research affecting
27 the responsiveness of the Indian companies supplying overseas market. The percentage next
28 to each factor represents the proportion of instances that each individual factor was recorded
29 in overall data collection. The percentage indicates the number of companies that mentioned
30 these factors as their operational problem that causes delay in their delivery time. The results
31 obtained from the interviews show that the top three factors influencing the responsiveness of
32 Indian industry beyond the conventional views expressed in the literature. The utilization of
33 IT and manufacturing equipment were not key determinants in improving the lead-time for
34 the products supplied from India. The following is a detailed explanation of each of the actual
35 key determining factors identified in the research.
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43 **Please Insert Figure 2 About Here**

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- 46 • Logistics and transportation: this takes the biggest portion of the overall lead time to
47 overseas markets and shipment around the globe. On average 4-6 weeks is spent on
48 shipping the products using sea transportation from ports in South India to Europe.
49 Additionally, due to the enforcement of the governmental policies towards cleaner
50 transportation using slow-steaming ocean transit, the working capital is tied up in
51 inventory for longer periods. The following quote is an example that shows the
52 viewpoint on transportation issues from India to Europe.
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57 *“Of course the customers are demanding, we currently make some products in 4-5*
58 *week and some in 10-12 weeks but on top of that you need to consider the shipping*
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3 *time which is normally 4-5 weeks for Europe. So they are demanding shorter lead*
4 *time and expecting us to have a warehouse and manage the inventory at their own*
5 *place (Manufacturer 11)”*
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8 *“... sometimes customers demand for faster delivery where we need to re-route and*
9 *change the port. This is a disadvantage where the people in Europe also have the*
10 *same lead-time and produce in 4-5 weeks but we in here need to add shipping time*
11 *and transportation on top of that. That is why we are talking to them about opening a*
12 *new warehouse and have vendor management inventory in our major customers*
13 *country because we want have them advantage of what the domestic manufacturers*
14 *have in US and EU (Manufacturer 11)”*
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19 • Electricity shortage: This is the next factor that has a significant effect on prolonging
20 the production processes. Inconsistent electricity supply was mentioned almost by all
21 the interviewees except the companies that have their own power generators in place
22 inside the organisation. However this factor is not directly under the control of
23 manufacturers and needs to be addressed by the Indian government.
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25
26 *“We don’t have any problem with electricity but it is because we produce our own*
27 *energy. I am sure other smaller companies are struggling with this issue every day.*
28 *(Manufacturer 1)”*
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31 *“Here in India, we need our governments’ support, for example in our company we*
32 *suffer from inconsistent electricity supply. There are situations that we need to stop*
33 *working for 3 hours during the day time (Manufacturer 4)”*
34

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36 • Excessive paperwork: This consists of time taken to complete the paperwork required
37 for domestic transportation, handling the logistics and export to Europe. However this
38 issue can be reduced to some extent by appropriate implementation of IT.
39 Nevertheless it is another factor which does not solely depend on the firm and should
40 be addressed by the Indian government.
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44 *“Our work is normally moved from one office to another, sometimes there is a delay*
45 *for over a week for some unknown reasons and we need to wait while our product*
46 *delivery is delayed (Manufacturer 5)”*
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- 48
49 • Working attitude was also among the top four reasons behind lack of supply
50 responsiveness of Indian suppliers. However this can be the result of insufficient
51 management skills to motivate and engage the workforce in team works towards
52 company’s set of clearly defined goals.
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3 *“One thing that we normally suffer from is the working attitude. Sometimes they*
4 *(workforce) tend to do the job in last minute, if there is no pressure from management*
5 *the orders will not be met until the last week.*

6
7 *... also another problem is that we have too many holidays in India and in addition to*
8 *that workers are asking for more holidays to spend time with their families*
9 *(Manufacturer 3)”*

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12 The result obtained in this study indicates that the lack of responsiveness in Indian industry in
13 not strongly related to the insufficient level of IT capability in the organisations. In fact there
14 is substantial effort put into enhancing the communications and data sharing with western
15 companies to facilitate the product development, reduce miscommunications and ultimately
16 increase the visibility in the supply chain. The main bottlenecks in achieving faster delivery
17 times are mainly out of firms’ operational impact and depend on the business environment
18 inside India. However the government support varies across India and problems such as
19 electricity shortage is widely noted in the state of Tamil Nadu. In accordance with these
20 results we establish the following propositions in the context of supply chain management,
21 which should be analysed in further studies:
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27 P1: Changing production cost differentials between India and UK is not the main reason
28 behind the British manufacturers’ re-shoring strategies.

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30 P2: Lack of production responsiveness in India is the main reason behind re-shoring
31 strategies in the UK.
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34 India is still considered to be a low cost country and continues to be targeted by western
35 multinational companies. Despite the dramatic increase in labour and transportation costs in
36 Asian countries (RSA and Lloyds Banking Group 2013), India still offers price competitive
37 advantages in comparison with other low cost locations (Make in India 2015). However lack
38 of supplier responsiveness is challenging Western OEMs who need to meet ever increasing
39 customer requirements. Today customers demanding for higher levels of product
40 customizations have put the manufacturing industries under substantial cost pressures due to
41 having to deal with shorter product lifecycles. Consequently unresponsive supply chains lead
42 to lower customer satisfactions (Yang *et al.* 2005). By re-shoring parts of the operations
43 required for producing products with shorter lifecycles and uncertain demand, the innovation
44 and product changes will be much easier managed by shorter supply chains. This also
45 supports the work done by Moradlou and Backhouse (2014) on implementation of
46 postponement strategies in the context of re-shoring. Since postponement can potentially
47 delay the activities in the supply chain and differentiation of end product until the real
48 information about the customer demand are available (Yang and Burns 2003). Hence by
49 moving the decoupling point (where the forecast driven production gives way to demand
50 driven production) downstream in the supply chain, the delivery time needs to be shorter
51 which in turn requires a more responsive supply chain (Van Hoek *et al.* 1999; Yang *et al.*
52 2004). Such strategy also allows to “right-shore” or “Intelli-source” the operations by
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3 combining the local knowledge and global network (Fine 2013; Tate 2014). In other words
4 both offshoring and re-shoring strategies can be adopted while having in mind that “the
5 lowest price can mean highest risk and highest risk can mean high total costs” (Fine 2013;
6 Bals *et al* 2015).
7

8
9 Moradlou and Backhouse (2016) suggest that the re-shoring manufacturing activities to
10 western countries can be seen as an opportunity to further employ postponement strategy in
11 the supply chain. Hence re-shoring can provide a platform to keep the products in generic
12 state and delay the product differentiation by taking advantage of local suppliers in the UK.
13 The businesses affected by slow supply chain can then improve their responsiveness by
14 postponing their manufacturing activities that serve the domestic market. Despite of having a
15 well-established literature available on the concept of postponement, the applications of this
16 strategy are still at an infancy stage (Yang and Burns 2003; Van Hoek 2001).
17
18

19 20 **Conclusion**

21
22 Due to the urgent requirement to meet the customer specifications and survive in a dynamic
23 business environment companies are revisiting their manufacturing location decisions. This
24 has resulted in a gradual re-shoring of manufacturing back to the UK. However the
25 motivations behind such strategies appear to be inconsistent in the available literature. Two
26 objectives were outlined in this paper. Firstly it provides a clear viewpoint of the issues
27 related to supply chain management that leads to re-shoring and secondly investigate the
28 reasons from Indian perspectives. Results indicate that responsiveness plays a vital role in
29 re-shoring decisions in the UK. This has ultimately led to number of industries re-shoring their
30 production back to the UK. In addition, this study highlights four main elements which are
31 currently slowing down the supply from India. These factors are logistics and transportation,
32 electricity shortage, excessive paper work and working attitude.
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36 While this paper has contributions to the body of knowledge, it also has some limitations in
37 its research methodology and data collection. The findings in this paper are limited to the
38 companies that were interviewed in the UK and India and the reduced sample size restrains
39 the level of generalizability of the findings. This study can firstly benefit from further in-
40 depth investigation and identification of other factors behind re-shoring. In addition to this
41 further validation is required using quantitative approach and larger sample sizes to include a
42 wider range of industrial sectors. It should be noted that responsiveness was found to be the
43 main reason for re-shoring to UK only in the context of Indian industries. This can be further
44 supported by studying other low cost countries such as China.
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Table 1. Firms Profiles

Sector	Firm	Number of employees	Informant position
Automotive	Manufacturer 1	1500	Commercial Officer
	Manufacturer 2	6000	Supply Chain Manager
	Manufacturer 3	150	Managing Director
	Manufacturer 4	120	Managing Director
	Manufacturer 5	80	Managing Director
	Manufacturer 6	200 in one department	Senior Quality Officer
Marine and Industrial goods	Manufacturer 7	3000	Design Manager
	Manufacturer 8	1300	Supply Chain Manager
Electrical	Manufacturer 9	600	Supply Chain manager
Textile	Manufacturer 10	260	Managing Director
Industrial goods	Manufacturer 11	720	Sales and Marketing Manager

Table 1, Summary of the interviews in the UK

Organisation	Type	Date of Interview	Viewpoint about re-shoring
Interview 1	Governmental Organisation	02.04.2014	<ul style="list-style-type: none"> • <i>Create more jobs in the UK</i> • <i>Serve domestic market</i> • <i>Cut production costs and time</i> • <i>Use government incentives</i>
Interview 2	Governmental Organisation	02.04.2014	<ul style="list-style-type: none"> • <i>Improve quality of the output</i> • <i>Create more jobs in the UK</i> • <i>Reduce product delivery time</i> • <i>Minimise logistic costs</i>
Interview 3	Consultancy	29.07.2015	<ul style="list-style-type: none"> • <i>Reduce costs</i> • <i>Shorten lead-time</i> • <i>Improve quality</i>
Interview 4	Consultancy	02.06.2015	<ul style="list-style-type: none"> • <i>Be more responsive to the demand</i> • <i>More integrated supply chain</i> • <i>Lower transportation costs</i>
Interview 5	Original Equipment Manufacturer	26.11.2014	<ul style="list-style-type: none"> • <i>Lower production costs</i> • <i>Better communication</i> • <i>Shorten lead-time</i>
Interview 6	Educational Organisation	02.04.2015	<ul style="list-style-type: none"> • <i>Be more responsive to the demand in UK</i> • <i>Better supply service</i> • <i>Better customer satisfaction</i> • <i>Lower transportation costs</i>

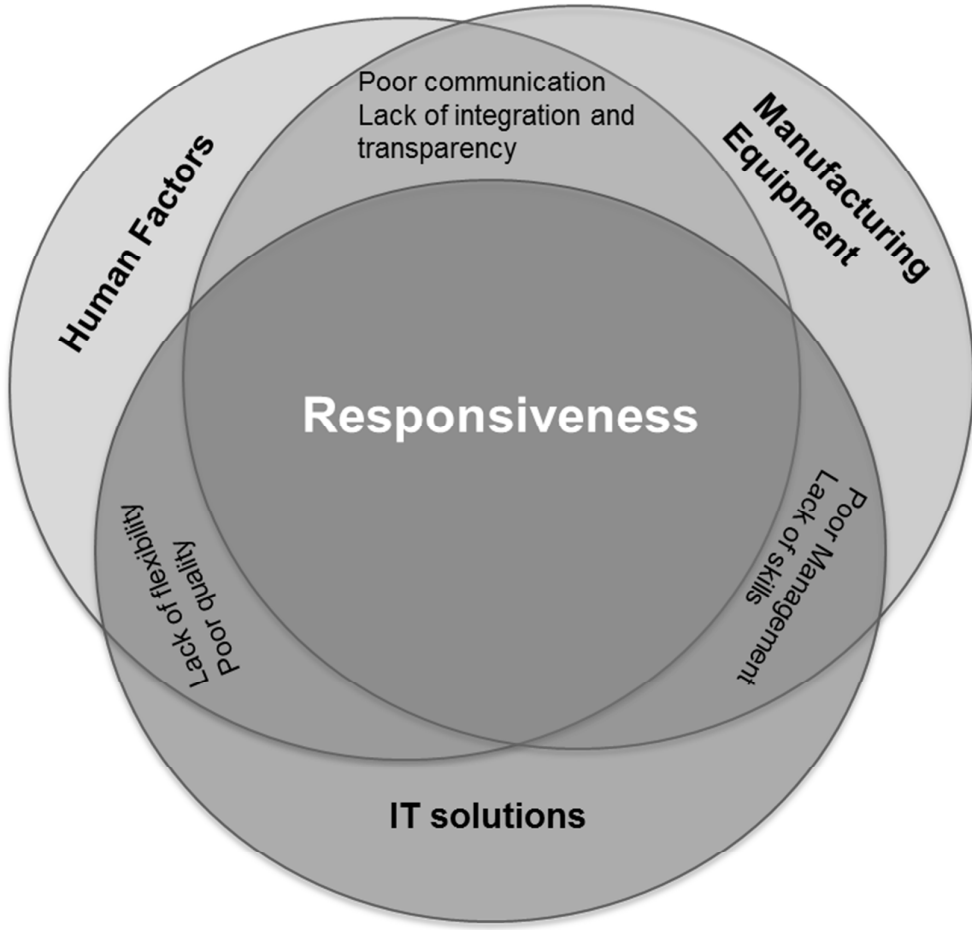


Figure 1. Responsiveness Framework

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tribution & Logistics

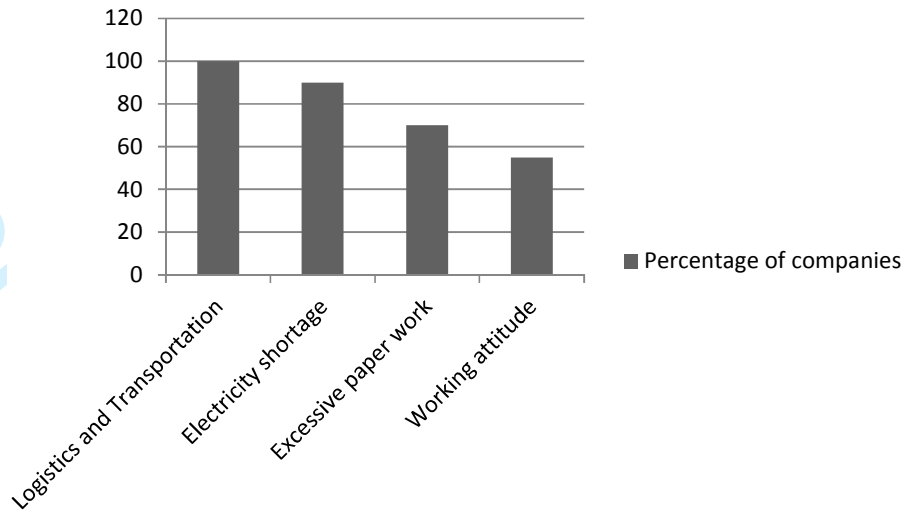


Figure 2. Factors affecting the responsiveness of Indian industries expressed as percentage of companies identifying the factors as their top 3 factors