Developing Mass Customisation: An Empirical Investigation of the pertaining market, organisational and CRM issues.

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Abstract: Contemporary business environment is characterized by emerging business challenges, to which companies must efficiently correspond, in order to gain competitive advantage. Today, leading companies have improved their core processes to an extent that the further increase of business performance can only be achieved through improved customer satisfaction and the provision of individualized products and services tailored to their needs. Mass customisation (MC) is expected to become an important strategic option, since the development of customised products and services that are offered at competitive prices is among the highest priorities in the services industry. On the other hand, Customer Relationship Management (CRM) is regarded as a source of competitive advantage by enabling organisations to explore and use knowledge of their customers and to foster profitable and long lasting one to one relationships. This paper is based in two surveys in the UK financial and insurance industries and aims to investigate the market and organizational issues for the introduction of mass customisation as well as the expectations of mass customisation development and the investigation of resources important to the successful implementation of mass customisation. Furthermore, the study explores the potential of IT enabled CRM as a strategic weapon for competitive advantage and as a tool supporting mass customisation.
1. Mass customization

Mass customization (MC) is expected to become an important strategic option, since the development of customized products and services that are offered at competitive prices is among the highest priorities in the services industry. The broad visionary concept was first coined by Davis (1987) and promotes MC as the ability to provide individually designed products and services to every customer through high process agility, flexibility and integration. Flexibility, variety and responsiveness are all essential to the notion of MC, for the companies need to understand what customers really want and then respond quickly with an offering which costs the customer relatively little more than standardized, mass produced alternatives (Duray and Milligan, 1999; Boynton et al., 1993; Feitzinger and Lee, 1997; Fulkerson, 1997; Peters and Saidin, 2000). Therefore, the success of modern organisations relies heavily on the effectiveness of their processes to produce and use information in order to achieve the better knowledge of customers and their individual preferences. A successful mass customiser should establish an information cycle that integrates its customers to all phases of development (Alford et al., 2000). On the other hand, customers are presented as more sophisticated and demanding with an orientation towards design and most importantly a new awareness of quality and functionality, which demands durable and reliable products corresponding to the specific needs of the purchaser (Davis, 1987). It is suggested (Pine et al., 1993) that the market place is characterized by higher levels of diversity by income, age, ethnicity and lifestyle.

Mass customisation is a “new” competitive strategy to challenge ‘old’ strategies such as mass production (Pine et al, 1993, Baldwin and Clark, 1997, Feitzinger and Lee, 1997, Duray and Milligan, 1999). A definition of mass customisation was given by Hart, who stated that “Mass customisation is the use of flexible processes and organisational structures to produce varied and often individually customised products and services at the low cost of a standardized mass production systems” (Hart, 1994).

As suggested (Gilmore and Pine II, 1997) there are four major approaches of mass customisation for organisations to consider, these are as follows:

- **Collaborative** customisation is for those organisations that have customers who find it difficult if not frustrating to articulate their requirements or even choose from numerous options.
- **Adaptive** customisation occurs when the organisation produces standardised products, which can be easily customized or reconfigured by the customers themselves.
- **Cosmetic** customisation is usually focused at the end of the value chain, as this is when a standardised product is presented differently to different customers.
- **Transparent** customisation is when the customers are not necessarily aware that their product or service has been customised to there own individual requirements. Instead of requiring customers to spend time and vocalise their specific needs, the companies observe their behaviour over time, looking out for predictable preferences and then using the knowledge gained on the customer discreetly customises their products or service within the standard package.

When companies embark on developing their mass customisation strategies and architectures they should take into consideration the following important factors (Pine et al, 1995).

- Create a modular production system.
• Allow your employees access to all necessary information thus improving the flexibility of processes and their adaptability to customers’ needs.
• Evaluate the products in customers’ terms, i.e. investigate how well a product serves a customer.
• Offer customers appropriate number of choices and select the product range that best satisfies the customer.
• Establish a direct link with customers.
• Make it harder for customers to go elsewhere, i.e. apart from giving customers product choice, mass customisation can create a customer interface that is value-added to customers.

2. Mass Customisation and Services Industry

Research on mass – customised services is rather important if we consider the special characteristics of the service operations. These are: (Murdick, 1990; Voss, 1985)

● They are more labour – intensive in relation to manufacturing
● They have greater customer involvement
● They are more sensitive to quality errors
● They have tighter delivery times
● They are unable to rely on inventories to adjust to demand fluctuations
● They are more dependent on information reliability

Both the insurance and the banking industries are showing strong signs of adopting a more customised approach towards their products (Peters and Saidin, 2000). They are moving with the times, accepting the changes and new demands of the market. It is often attributed to the post industrial age or information age that customers set the rules and, as a consequence, even a greater extent of individualization must be realized in an efficient form (Hagel and Singer, 1999). Customers are now seen as individuals rather than objects to be standardized. Individuality is the new fashion and the fashion has now spread from not only manufactured goods but also into the services we use. The financial sector has realized this shift in demand and is making preparations to meet it. As it is claimed (Boynton et al., 1993; Parker, 1996) ‘Through the application of technology and new management methods, they have found their way to a new paradigm by creating variety and customisation through flexibility and quick responsiveness’.

With market fragmentation and demographic change, limits to the system of mass production have been encountered by this industry. In direct response to this, Insurance is moving away from standardized products and targeting the mass market of more flexible, tailored products and also the niche markets. For example, one of the companies leading this move is The New England, whose president and chief operating officer, states that ‘clients will increasingly seek tailored solutions to their needs, rather than standard products’ and goes further to observe that this industry is finding that they are a ‘service’ industry after all: the “industry is learning that the product is not the product – it is the complete package of information, education, advice, attitudes and ongoing service plus the actual product that the customer values’ (Lindquist, 1991). The New England is completely re – engineering its business processes, tailoring and making new additions to new products with shortened developing times, increasing the services to both the customer and agent, and drastically cutting turnaround time by moving the policy approval process closer to
customers. The New England is one of the leading companies guiding the Insurance Industry away from the time of mass production.

However, the time span in which all these changes have occurred within these industries is short. The areas they are now focusing is customisation. On the other hand, their experience lies primarily within the process of mass production. This is where mass customisation comes into the picture, a combination of the past processes with the present. In order to achieve mass customisation of products and services it is important to listen carefully to customers in order to design a set of product variants and individualization options that on the one hand has enough possibilities for customisation, but on the other is as easy as possible to reduce complexity, a main cost driver of mass customisation. It is suggested (Jiang, 2000) that the goal is to ascertain, from the customer’s perspective, the range within which a given product or service can be meaningfully customised (i.e. differentiated) for that customer, and then to facilitate the customer’s choice of options from within that range. The key issue of any of the above approaches or combinations of customisation is to draw on whatever means of customisation prove necessary to create unique customer value within the limits of the organisations capabilities and orientation.

3. Customer Relationship Management (CRM) and Services industry

In response to the growing threat from non – financial and non – traditional competitors, established Financial Services providers (FSPs) are looking to Information Technologies (IT) to help them deliver a full range of financial products or to complement traditional ones such as deposit, investment, credit and insurance services. IT when appropriately utilized can help retain customers by better managing customer – related knowledge and thus building stronger relationships (Kohli et al., 2001). Customer Data is now recognized as an asset. Large Financial service organisations hold enormous amounts of data on their customers. Recently they have started to become aware of the possibilities of using this data to build long – term relationships with them. To leverage the vast amount of data these organisations have, many are adopting more sophisticated data storage and processing technologies (Ryals and Knox, 2001).

Customer Relationship Management (CRM) holds the promise to achieve such corporate objectives and is regarded as a source of competitive advantage by enabling organisations to explore and use knowledge of their customers and to foster profitable and long lasting one to one relationships. CRM refers to the continuous use of redefined information about current and potential customers in order to anticipate and respond to their needs (Peppard, 2000).

The philosophy of CRM is based on: (Ryals and Knox, 2001)

- Relationship orientation
- Customer retention
- Superior customer value created through process management
- IT as the enabling technology that can assist in discovering and managing the necessary customer knowledge

CRM focuses on the management of all possible ways that an organisation interacts with its customers, from receiving an order through the delivery of the products and services and draws a combination of business processes and IT, so that customer knowledge can be discovered and questions such as “who the customers are?”, “what they do?” and “what they are like?” can be answered (Ryals and Knox, 2001).
The financial services industry has proven a fertile medium in which CRM has grown at a significant rate basically due to the fact that its transactions are IT based and its business is information intensive (Codington and Wilson, 1994). Traditional marketing approaches have tended to utilize macro and micro segmentation techniques, thereby classifying ‘types’ of customer in the market. However, given the ‘unpredictability’ of the customer buying behaviour, traditional marketing, especially in information rich sectors like FSPs, is fast giving way to one to one marketing, whose aim is to individualise the marketing effort. With the effective use of information and communication technologies, organisations can offer their customer variety of products, lower prices and personalized services all at the same time (Peppard, 2000) and thus, mass customisation of products and services may be accomplished.

Companies should recognize that the effectiveness of CRM processes depends on the close link between front – line activities and internal operations such as product development, strategic planning, and financial processes. The goal is to make it easy for the front line to relay customer requirements and issues to upstream portions of the process, in other words, to carry the voice of the customer into the organisation and use it to guide processes (Kalakota and Robinson, 2000).

This study explores:

● The market and organizational issues for the introduction of mass customisation.
● Organizational aspects of MC:
● The employees understanding and participation in MC planning
● Issues on information and technology resources
● The expectations of mass customisation as a strategy for competitive advantage and improvement of customer satisfaction
● The potential of IT enabled CRM as a strategic weapon for competitive advantage and as a tool supporting mass customisation.

4. Research Methodology

This study is based in two surveys conducted in the UK, the one referring to the mass customisation market and organizational considerations which involves an exploratory study of 40 IT and Marketing managers of the banking and insurance sector and the other referring to the IT enabled CRM and its potentiality as a competitive advantage enabler which involves an empirical investigation of the financial services sector with a sample of 21 participants.

In the survey for the mass customisation market and organisational considerations, a questionnaire was developed and posted to IT and marketing managers in banks and insurance companies in the UK. The research concentrated on the banking and insurance sectors of the services industry for its information intensive nature where MC is expected to have a significant role in their competitive strategy. 200 (n = 200) questionnaires where sent and 40 valid responses were received, from 20 banks and 20 insurance companies, thus giving a response rate of 20%. This response rate was considered to be satisfactory for statistical analysis and as a representative of the industry population strata. As it is suggested (Hinton, 1995) a sample size of 30 or more is considered a rule of thumb for an effective sample analysis to take place and can be judged as being a good representative of the population.
The questionnaire was developed by taking into consideration issues pertaining to success factors of MC. Multi - part questions were broadly divided into the following categories that reflect this study’s research objectives:

- How appropriate MC is as business strategy in the financial sector?
- What are the expectations related to MC development?
- How knowledgeable are the employees about MC?
- Specific resources i.e. Technology – Machinery and Information – Knowledge for they play important roles in the process of mass customisation and may inevitably aid organisations in progressing into a more mass customised approach.

Regarding the above mentioned resources, respondents were asked specific questions about the extent to which they believe these resources are related to certain attributes. The attributes i.e. flexibility, reusability, availability etc. were identified as being a crucial part to mass customisation. This analysis will contribute for modelling the business processes required for supporting mass customisation.

Regarding, the second referring to the IT enabled CRM, a questionnaire was developed and sent to a selected sample of 46 companies. A selection of representative banks, building societies and fund management companies was made from a contact database of financial services providers. The selection included large organisations with a global presence and small to medium entities, such as building societies located regionally and nationally. A total of 21 usable responses were received, obtaining a response rate of 45.65%.

The CRM literature suggests that successful CRM implementation requires an enterprise-wide integration of processes and a change in management focus and business performance metrics (Ryals and Knox 2001; Peppard 2000; Camarata-Beckett et al. 1998). In (Peppard 2000) an ECRM framework is proposed that promotes a broader view of CRM implementation. ECRM is an acronym made out of the initial letters of the central concepts in CRM development, i.e.

- E: for E-business that refers to the integration of e-business activities.
- C: for Channel Management that suggests the integration and interactivity of channels with respect to customer access and distribution of products and services.
- R: for Relationships that should be build on service excellence, value and convenience.
- M: for Management of the total organisation and the integration of the front and back office processes.

The questions in our study were designed so that they address CRM implementation from an enterprise-wide perspective taking into consideration the ECRM framework and suggestions from the relevant literature. The intention was to keep the questions as short as possible and to use simple, clear, concise and unambiguous language to aid the participants’ understanding. There was therefore no requirement for the respondents to do anything other than to tick predefined response boxes. A four-point scale (Strongly, Moderately, Little, Not At All) and a Do not Know option were used in both surveys in order to provide the respondents with an indication of the degree to which they agreed with each of the survey questions. Furthermore, space was given to the participants in order to report any issues they would consider important and they were included in the questionnaire.
5. Limitations of the study

The study focuses only the financial and insurance sectors in the UK. Although conclusions for the whole industry can be drawn, a large scale survey that includes companies from across from across the business sectors from different countries would shed more light on how companies approach MC and how they perceive the potential of IT enabled CRM as a strategic weapon for competitive advantage and as a tool supporting mass customisation.

6. Data Analysis

6.1. Market and organizational considerations of Mass Customisation for the Services Sector

Issues such as the dynamic technological change and heterogeneity of markets, the products modularity and the flexibility of the business processes’ architecture are among the drivers of MC (Peters and Saidin, 2000) and subsequently they are investigated in this study. Table 1 summarises the results.

The financial services sector is characterised by dynamically changing customer needs, high heterogeneity and quite fast technological changes, according to the respondents’ views. These three factors along with the information intensive nature of the business sector create an environment where MC should be considered as a high priority competitive strategy. Indeed, 77.1% of the respondents believe that MC is possible in their organisation while 85.7% highlight its importance to customer satisfaction.

The applicability of MC depends also on the ability of individual organisations to develop a modular architecture of services so that they can utilise potential economies of scale, develop the necessary variety and achieve customisation to customer needs. However, 57.1% of the sample believes that modularity of services is problematic in their business sector while 60% believe that developing a large variety of services is also difficult.

<table>
<thead>
<tr>
<th>Market and Organisational Consideration on Mass Customisation</th>
<th>Not at All + Little</th>
<th>Moderate + Strongly</th>
<th>I do not Know</th>
</tr>
</thead>
<tbody>
<tr>
<td>Market Issues</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>To what extent does Heterogeneity of market characterise your business sector?</td>
<td>20%</td>
<td>60%</td>
<td>20%</td>
</tr>
<tr>
<td>To what extent do Technological changes characterise your business sector?</td>
<td>20%</td>
<td>71.4%</td>
<td>8.6%</td>
</tr>
<tr>
<td>To what extent do dynamically changing customers’ needs characterise your business sector?</td>
<td>31.5%</td>
<td>65.7%</td>
<td>2.9%</td>
</tr>
<tr>
<td>To what extent do you believe that Mass Customisation is possible for your business sector?</td>
<td>22.9%</td>
<td>77.1%</td>
<td>0%</td>
</tr>
</tbody>
</table>
To what extent do you think that Mass Customisation will contribute to your customers’ satisfaction?

<table>
<thead>
<tr>
<th>Percentage</th>
<th>11.4%</th>
<th>85.7%</th>
<th>2.9%</th>
</tr>
</thead>
</table>

**Business Processes Flexibility**

To what extent do you believe that your processes can support a modular architecture of your products/services (in terms of knowledge, skills and product development procedures required)?

<table>
<thead>
<tr>
<th>Percentage</th>
<th>40%</th>
<th>40%</th>
<th>20%</th>
</tr>
</thead>
</table>

**Services Issues**

To what extent do you believe that the development of a large variety of products/services is a problem for mass customisation in your business sector?

<table>
<thead>
<tr>
<th>Percentage</th>
<th>34.3%</th>
<th>60%</th>
<th>5.7%</th>
</tr>
</thead>
</table>

To what extent do you believe that the development of a “modular” architecture of products/services is a problem for mass customisation in your business sector?

<table>
<thead>
<tr>
<th>Percentage</th>
<th>25.8%</th>
<th>57.1%</th>
<th>17.1%</th>
</tr>
</thead>
</table>

To what extent do you believe that your customers would be more satisfied if you presented the same products to them in a different but customised way?

<table>
<thead>
<tr>
<th>Percentage</th>
<th>25.8%</th>
<th>71.4%</th>
<th>2.9%</th>
</tr>
</thead>
</table>

Table 1: Market and Organisational Considerations on Mass Customisation

Cosmetic customisation can also be an option since 71.4% of the respondents believe that customers will be more satisfied if similar products will be presented to them in a different but customised way. However, without the necessary modularity of services and flexibility of business processes an organisation restricts the potential of MC by being able to develop MC plans only as a cosmetic customiser. Clearly, the restructuring of services as well as the specification of services’ modules are necessary for the success of MC. Furthermore, businesses should develop the management structures and policies that enable reconfiguration and rearrangement of the organisational resources. Based on our research findings, the re-engineering of processes also need further attention, since 40% of the respondents stated that their business processes architecture cannot support the modularity of services.

6.2. Expectations related to MC development

Companies in the sample develop MC with the expectation of improving their customers’ satisfaction and achieving competitive advantage with 54.3% and 45.7% respectively, as shown in Figure 1. Pursuing of competitive advantage and customers satisfaction is not associated strictly with cost cutting, especially in such a competitive and turbulent business sector.
6.3. Employees understanding and participating in MC planning

There is a big percentage of both Information Systems (IS) and business people understanding of the potential of MC (as shown in Table 2), but they do not participate to its planning extensively. Moreover, there is no collaboration with customers and suppliers for the planning of MC. The corresponding percentages of 28.6% and 31.4% participation of IS and business staff in MC planning, indicates that the concept of MC is not properly implemented and it is rather an exercise confined within the borders of higher management. For the success of MC though it is important to facilitate and secure the active involvement of employees, who collaborate with their customers, are responsible for the design of corporate IS, are developing new services etc. The success of MC in other words should be woven into the structure of the organisation securing the efficient communication among key employees and the customers for the development of MC, the services as well as the necessary IS applications for the realisation of MC. Moreover, in an information intensive sector such as the financial, a critical resource is the employees' ability in terms of their knowledge and expertise. Organisations for example, apart from encouraging employees to participate in MC planning, should also facilitate the reconfiguration of their resources through their employees’ participation in the management of groups of related services.

<table>
<thead>
<tr>
<th>Participation and Understanding of Mass Customisation</th>
</tr>
</thead>
<tbody>
<tr>
<td>IS employees understanding of MC</td>
</tr>
<tr>
<td>Business employees understanding of MC</td>
</tr>
<tr>
<td>IS employees participation in MC planning</td>
</tr>
<tr>
<td>Business employees participation in MC planning</td>
</tr>
<tr>
<td>Customers participation in MC planning</td>
</tr>
</tbody>
</table>

Table 2: Employees Understanding and Participation in MC Planning
6.4. Resources

This section discusses the importance of certain attributes of two resources for they play an important role in the successful implementation of MC. These attributes should be considered in modelling processes for supporting mass customisation.

6.4.1. Technology – Machinery

Technology is a contributing resource enabling the likely success of mass customisation, for as mass customisation enters more and more consumer markets, new information technologies can be seen as its main enabler (Piller, 2000). The technology resource in this study includes all information and communication technologies, which are currently available.

Table 3 shows the results gathered on all questions relating to Technology resources. This table includes the number of completed questionnaires (N), the average score (Mean), the average amount in which the scores deviate from the mean (Std. Deviation) and the direction of frequency distribution (Skewness). The Attributes of the technology – machinery resource which are investigated comprise:

- **Flexibility**, i.e. being used for more than one product and / or service.
- **Reliability**, i.e. their dependability in functioning properly when needed.
- **Responsiveness**, i.e. how quickly they can be set up to support another product / service in response to a new customer demand.
- **Reusability**, i.e. the amount of times they can be reused in order to produce different products / services.
- **Cost**, i.e. the expense of maintaining & updating.
- **Degree of Endurance**, i.e. the life span of the machinery.

As indicated by the Mean, both Banking and Insurance feel quite strongly on the following attributes, which would aid technology to support mass customisation:

- Flexibility
- Reliability
- Responsiveness

<table>
<thead>
<tr>
<th>Banking &amp; Insurance Statistics on Technology – Machinery</th>
<th>Business Sector</th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Skewness</th>
</tr>
</thead>
<tbody>
<tr>
<td>To what extent do you believe that the Flexibility of technology – machinery supports MC?</td>
<td>Bank</td>
<td>20</td>
<td>3.55</td>
<td>0.94</td>
<td>-3.07</td>
</tr>
<tr>
<td></td>
<td>Insurance</td>
<td>20</td>
<td>3.65</td>
<td>0.49</td>
<td>-0.68</td>
</tr>
<tr>
<td>How Flexible is your technology – machinery?</td>
<td>Bank</td>
<td>20</td>
<td>3.35</td>
<td>0.49</td>
<td>0.68</td>
</tr>
<tr>
<td></td>
<td>Insurance</td>
<td>20</td>
<td>2.45</td>
<td>1.00</td>
<td>-0.38</td>
</tr>
<tr>
<td>To what extent do you believe that the Reliability of technology – machinery supports MC?</td>
<td>Bank</td>
<td>20</td>
<td>3.45</td>
<td>1.00</td>
<td>-2.49</td>
</tr>
<tr>
<td></td>
<td>Insurance</td>
<td>20</td>
<td>3.45</td>
<td>0.69</td>
<td>-0.89</td>
</tr>
<tr>
<td>How Reliable is your technology – machinery?</td>
<td>Bank</td>
<td>20</td>
<td>3.45</td>
<td>0.69</td>
<td>-0.89</td>
</tr>
<tr>
<td></td>
<td>Insurance</td>
<td>20</td>
<td>2.95</td>
<td>1.05</td>
<td>-1.10</td>
</tr>
<tr>
<td>To what extent do you believe that the Responsiveness of technology – machinery supports MC?</td>
<td>Bank</td>
<td>20</td>
<td>3.55</td>
<td>1.00</td>
<td>-2.79</td>
</tr>
<tr>
<td></td>
<td>Insurance</td>
<td>20</td>
<td>3.35</td>
<td>0.88</td>
<td>-1.32</td>
</tr>
<tr>
<td>How Responsive is your technology – machinery?</td>
<td>Bank</td>
<td>20</td>
<td>3.40</td>
<td>0.60</td>
<td>-0.39</td>
</tr>
<tr>
<td></td>
<td>Insurance</td>
<td>20</td>
<td>2.95</td>
<td>0.89</td>
<td>0.10</td>
</tr>
<tr>
<td>To what extent do you believe that the Reusability of technology – machinery supports MC?</td>
<td>Bank</td>
<td>20</td>
<td>3.40</td>
<td>1.05</td>
<td>-2.16</td>
</tr>
<tr>
<td></td>
<td>Insurance</td>
<td>20</td>
<td>2.45</td>
<td>1.15</td>
<td>-0.10</td>
</tr>
<tr>
<td>How Reusable is your technology – machinery?</td>
<td>Bank</td>
<td>20</td>
<td>3.10</td>
<td>0.85</td>
<td>-0.77</td>
</tr>
</tbody>
</table>
Table 3: The average results produced from questions on Technology/ Machinery

<table>
<thead>
<tr>
<th>Question</th>
<th>Insurance</th>
<th>Bank</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>To what extent do you believe that the Cost of technology – machinery is a problem in customizing your products?</td>
<td>20 2.30</td>
<td>20 3.20</td>
<td>-0.92 -1.75</td>
</tr>
<tr>
<td>How Costly is your technology – machinery?</td>
<td>20 3.55</td>
<td>20 3.70</td>
<td>0.60 -1.24</td>
</tr>
<tr>
<td>To what extent do you believe that the Degree of Endurance of machinery used supports MC?</td>
<td>20 2.70</td>
<td>20 2.65</td>
<td>0.92 -0.77</td>
</tr>
<tr>
<td>How Enduring is your machinery?</td>
<td>20 2.40</td>
<td>20 2.70</td>
<td>1.19 -1.65</td>
</tr>
</tbody>
</table>

The skewness of results indicates that the Banking industry group concentrates towards the higher end of the scale, to that of ‘Strongly’. The Insurance industry results are a little more distributed towards the feeling of ‘Moderate’ whilst still occupying ‘Strongly’ as the most frequent score. This indicates that overall Banking is more united in their opinions as to the level of importance these attributes have in technology.

Views on the level of Reusability of technology do differ considerably, with Insurance respondents expressing a level of feeling averaging the middle scale of ‘Little’. However, the Banking respondents in contrast remain feeling ‘Strongly’.

With reference to the Cost of Technology, both sectors most frequently occupy the score level of ‘Strongly’. However, there is less deviation from the high mean in the Insurance results indicating a large grouping of results within the higher section of scores. Banking on the other hand though having a feeling averaging the level of ‘Strongly’, their remaining responses appear to be evenly distributed amongst the lower levels of scores.

The views on the Degree of Endurance of machinery were quite varied, occupying the level of scores ‘Little’ - ‘Strongly’ for both sectors. Both averaged results very similar to each other, with Banking mean of 2.65 and Insurance at 2.70. The level of Skewness indicates a more even distribution of results for Banking between the higher scores, whilst Insurance hit its peak at the level of Moderate.

6.4.2. Information – Knowledge

Information can be regarded as one of the most important factors for the implementation of mass customisation. Being truly customer focused is not possible if the organisation is not, first, information intensive (Blattberg and Glazer 1994). Mass Customisation can be successful only when it can meet the need for information and communication both purposefully and efficiently (Piller, 2000). In order to provide the customer with what they want at a price they want, organisations must first get to know their customers as well as the organisational knowledge required for the development and customisation of services.

If organisations invest in enhancing their flows of information between the customer and themselves and within the businesses themselves, then they will be a step closer to successfully achieving mass customisation, thus showing a great deal of potential for it.

The attributes of information – knowledge that are investigated comprise:

- **Availability** i.e. to be able to have immediate access to the appropriate information
- **Reliability** i.e. being up-to-date and correct
- **Reusability** i.e. reusing the same customer information for other products/services
- **Cost** i.e. the cost of gathering customer information

Table 4 presents the results gathered on all questions relating to the resource of Information and knowledge.

<table>
<thead>
<tr>
<th>Business Sector</th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Skewness</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Bank</strong></td>
<td>20</td>
<td>3.35</td>
<td>0.81</td>
<td>-0.77</td>
</tr>
<tr>
<td><strong>Insurance</strong></td>
<td>20</td>
<td>3.05</td>
<td>0.94</td>
<td>-0.52</td>
</tr>
<tr>
<td>To what extent do you believe that the <strong>availability</strong> of information supports MC?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bank</td>
<td>20</td>
<td>3.40</td>
<td>0.68</td>
<td>-0.71</td>
</tr>
<tr>
<td>Insurance</td>
<td>20</td>
<td>3.20</td>
<td>0.62</td>
<td>-0.21</td>
</tr>
<tr>
<td>How Available is your information?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bank</td>
<td>20</td>
<td>3.30</td>
<td>1.26</td>
<td>-2.04</td>
</tr>
<tr>
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<td>3.35</td>
<td>0.93</td>
<td>-1.24</td>
</tr>
<tr>
<td>To what extent do you believe that the <strong>Reliability</strong> of information supports MC?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bank</td>
<td>20</td>
<td>3.10</td>
<td>1.17</td>
<td>-1.54</td>
</tr>
<tr>
<td>Insurance</td>
<td>20</td>
<td>3.15</td>
<td>0.75</td>
<td>-1.15</td>
</tr>
<tr>
<td>How Reliable is your information?</td>
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<td></td>
<td></td>
<td></td>
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<td>20</td>
<td>3.30</td>
<td>1.17</td>
<td>-1.74</td>
</tr>
<tr>
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<td>3.30</td>
<td>1.08</td>
<td>-1.23</td>
</tr>
<tr>
<td>To what extent do you believe that the <strong>Reusability</strong> of information supports MC?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bank</td>
<td>20</td>
<td>3.30</td>
<td>0.73</td>
<td>-1.45</td>
</tr>
<tr>
<td>Insurance</td>
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<td>2.70</td>
<td>0.86</td>
<td>-0.43</td>
</tr>
<tr>
<td>How Reusable is your information?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bank</td>
<td>20</td>
<td>3.05</td>
<td>0.83</td>
<td>-0.72</td>
</tr>
<tr>
<td>Insurance</td>
<td>20</td>
<td>3.15</td>
<td>0.81</td>
<td>-0.30</td>
</tr>
<tr>
<td>To what extent do you believe that the <strong>Cost</strong> of gathering information is a problem in mass customizing your products / services?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bank</td>
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<td>2.95</td>
<td>1.05</td>
<td>-1.10</td>
</tr>
<tr>
<td>Insurance</td>
<td>20</td>
<td>3.05</td>
<td>0.83</td>
<td>-0.10</td>
</tr>
</tbody>
</table>

Table 4: The average results produced from questions on Information

As indicated by the mean both Banking and Insurance feel quite strongly on the following attributes which would aid information to support mass customisation:
- Availability
- Reusability
- Reliability

The constant negative skewness throughout results for both industries further supports this observation.

However, opinions on the Cost of gathering information being a problem in mass customising products were different. The view of ‘Moderate’ was most frequently agreed on by Banking respondents and a view of ‘Strongly’ by the Insurance respondents.

6.5. CRM as a strategic tool

This section investigates the ways that CRM-enabled software is being actively deployed as a strategic tool in order to gain and maintain market dominance.
Table 5: CRM as a Strategic Tool.

Table 5 shows that 95% of the respondents strongly or moderately regard CRM as providing their organisations with a competitive advantage in the UK FS marketplace. Furthermore, the participants in this study agreed 100% strongly or moderate that CRM would assist in the co-ordination of the sale of products and services to their customers. Additionally, the relatively high percentage (67%) of respondents that perceive strongly or moderate the contribution of CRM to supporting sales and marketing strategies indicates that they share relatively high expectations regarding the potential of CRM.

However, according to results (shown in table 5), the strategic expectations of CRM are not always fulfilled in practice. CRM data is only being used in a minor way to assist organisations penetrate new markets, since only 33% of respondent strongly or moderate agrees that an analysis of their CRM data had actually helped their organisation to enter new markets. The situation is similar to the analysis of CRM data for new products and services definition, with a percentage of 32% using strongly or moderate for this purpose. Similarly, 43% of the respondents make limited use of CRM-derived data to maintain or improve their market share as opposed to the 14% who acknowledge strong use of CRM in this area. Moreover, the customer pre/post sales activity seems to be facilitated by CRM in practice. Only a small percentage of 19% supports the strong use of CRM although there is an optimistic group representing 48% of the sample who supports CRM ‘moderately’.

Additionally, the anticipated impact of CRM on organisational business processes, is not as marked as one would have expected since the spread of responses to this issue was equal amongst ‘Strong’, ‘Moderate’ and ‘Little’.
These findings lead to the conclusion that respondent organisations are not using their CRM tools to their fullest capacity. CRM is currently failing to meet user expectations due to either overestimation of its capabilities or due to management inability to adopt a suitable approach for CRM implementation. There is evidence in the CRM literature (Ryals and Knox 2001; Peppard 2000) that financial institutions do not consider CRM as a strategy, nor they integrate it with their business, but view it instead as just another software application.

7. Conclusions

The study indicates that MC has the potential and is expected to become a competitive strategy in the financial and insurance services sector. Businesses in these sectors acknowledge its importance to their competitiveness and their customers’ satisfaction. The financial services sector is characterised by dynamically changing customer needs, high heterogeneity and quite fast technological changes. These three factors along with the information intensive nature of the business sector create an environment where MC should be considered as a high priority competitive strategy. However businesses need to adjust to new requirements necessary for the successful development of MC. The understanding of the potential as well as the capabilities of businesses in developing customised but highly competitive services will depend on the understanding of the potential of their resources and the ability to use them properly. Clearly, the restructuring of services, the specification of services’ modules and their resources interdependencies are necessary for the success of MC. As a consequence, businesses should develop the management structures and policies that enable resources reconfiguration.

In this context, the most important attributes of the technology - machinery and information - knowledge resources are explored and identified. These attributes will be taken into consideration in business modeling for mass customisation. As indicated, both Banking and Insurance feel quite strongly on the following attributes, which would aid technology to support mass customisation: Flexibility, Reliability and Responsiveness. As regards information – knowledge, the attributes of Availability, Reusability and Reliability where identified as necessary for that resource to be able to support mass customisation.

In an information intensive sector such as the financial, a critical resource is the employees’ ability in terms of their knowledge and expertise. Organisations for example should facilitate the reconfiguration of their resources, by encouraging employees to participate in the management of groups of related services. Furthermore the concept of mass customisation should be woven into their structure by encouraging and involving key employees, customers and suppliers in MC planning. Still, without the necessary modularity of services and flexibility of business processes an organisation restricts the potential of MC by being able to develop MC plans only as a cosmetic customiser.

In the FSP sector, which is an information intensive industry, CRM will prove to be a source of competitive advantage and a further practice to support the implementation of a mass customisation strategy. Respondents possess high expectations of CRM, which is regarded as providing their organisations with competitive advantage in the UK FS marketplace through the assistance of the coordination and support of sales of products and services to their customers. The analysis of the current situation indicates that CRM systems are technically sound but CRM data is not being disseminated extensively within the organisations and are used in a minor way to assist organisations penetrate new market and define new products - services. Furthermore, they are not used to facilitate interorganisational co-
ordination and the anticipated impact on organisational business processes. This comes in accordance with the CRM literature that suggests that the financial institutions do not consider CRM as a strategy, nor they integrate it with their business, but view it instead as just another software application.

It is necessary though that companies recognize that the effectiveness of CRM processes depends on the support from management, the careful introduction to business as well as the close link between front-line activities and internal operations such as product development, strategic planning, and financial processes, thus providing an opportunity for customizing products and services effectively and enhancing customer satisfaction.
References


