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## **Building antifragility in service organisations: going beyond resilience**

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**Abstract:** To maintain organisational growth in a turbulent environment, organisations must build highly effective learning systems to innovate and develop from threats and stressors. This has been termed by Taleb (2012) as ‘antifragility’. This paper explores the benefits of applying a systems approach to service delivery design in order to build an ‘antifragile’ organisation that can learn from disruptions. Two exploratory case studies were conducted in the UK insurance sector using in-depth interviews supported by documented evidence. The findings of the case studies analysis suggest that systems approach expressed as the Vanguard method (Seddon, 2003) is likely to enhance organisational ‘antifragility’ by promoting a multilevel driver for learning from stressors. These levels being: 1) the macro level of clarity on the system due to the continuous analysis of customer demands received; 2) the meso level of organic structure of work place where effective learning-centred teams are built; 3) the micro level of employees’ engagement with work and readiness to learn. This paper represents an early effort to explore the dynamics of how organisations can go beyond resilience by discovering how to develop the capacity to learn from stressors in order to flourish.

**Keywords:** antifragility; service operations; service delivery; learning organisations; service organisations; organisational learning.

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## 1 Introduction

The notion of learning organisations has gained popularity in recent organisation theory literature as a result of increasing environmental variability, shocks, and disruptions (Jain and Mutula, 2008; Nagarajan et al., 2012; Bhat et al., 2012). The stressors of a chaotic and uncertain environment on organisations are, indeed, unavoidable (Shipton et al., 2013). These stressors include disruptions and disorders such as natural disasters, customer demand randomness, financial crisis, volatile customer tastes, and other unanticipated factors (Dongxia and Kan, 2011). To maintain viability and growth, in such environments, organisations must build highly effective learning systems to learn from threats and stressors they face (Hannah and Lester, 2009; Loss et al., 2010). The ability of organisations, or any type of systems, to learn from their own stressors, has been termed by Taleb (2012) as ‘antifragility’. According to Taleb (2012), organisations that have built this property are able to grow when exposed to volatility and disorder of the surrounding environment as they learn from them. Antifragility, therefore, views errors and randomness as an essential thing for organisations to improve, and that depriving organisations from volatility and shocks will weaken the system (Taleb, 2012). In the opposite case, fragility is related to systems that cannot absorb volatility of the surrounding environment and, therefore, the system usually suffers. Fragile systems tend to function well in mechanistic environments where changes are rare or even does not exist (Taleb and Douady, 2012), which is almost impossible to find in the current global business environment. However, previous research has focused on exploring the relationship between organisational learning and its benefits to the organisation such as increased innovation and enhanced competitive advantage (Maden, 2012), paying little attention to the tools and processes that help organisations to design better operating systems that guide organisational learning and “antifragility”. As a result, there are many organisations that diminish as they fail to learn to improve their performance when faced with disruptions (Foster and Kaplan, 2001; Hannah and Lester, 2009; Glock et al., 2012; Kumar et al., 2013). Yet, as Taleb (2012) indicates, this diminishing is often a result of organisational fragility. Arising from this, several authors suggest that building learning

organisations, which can learn from stressors, require profound shifts in, both, the nature of operational work based on the development of organic and open systems, and a decentralised decision making approach to focus on external customers (Senge and Sterman, 1992; Argyris and Schon, 1996; Kharbanda, 2002; Seddon, 2008; Maden, 2012; Shipton et al., 2013). Nevertheless, different organisational learning models developed so far, such as the work of Senge (1990), Slater and Narver (1995), Ortenblad (2004), and Garvin et al. (2008), present theoretical measures of building learning organisations that are only focused on internal variables. The challenge is, therefore, to move from these theoretical approaches to practical tools and systems that can help the creation of organisations that can learn from turbulence in their environments (i.e., antifragile).

With this in mind, this paper aims at closing the aforementioned gap by offering an innovative systems engineering approach for service delivery. This approach is developed by Seddon (2003), a British specialist in the service industry. The term “the Vanguard method” will be used to describe this service delivery system throughout this paper. This approach to service delivery system is experiencing a significant take-up in the service sector, where it offers a considerable impact on improving the efficiency and competitive advantage of organisations (Jackson et al., 2008; Jackson, 2009). The Vanguard method is centred on three core elements:

- 1 interrelationships of employees interaction and social exchange, both within their teams and between organisational parts
- 2 dynamics of the organisation that requires a significant amount of coordination, and power delegation to team members
- 3 wholeness of the organisation where departments are dependent on each other and the whole to guarantee the interconnectedness of people (Jaaron and Backhouse, 2012; Seddon, 2008; Jackson et al., 2008).

Because of this, the Vanguard method is an enabler for developing an organically structured organisation (Jaaron and Backhouse, 2010).

Qualitative exploratory case study is adopted in this research, as the goal of the study is to induce novel understandings of the relationships between implementing the Vanguard method in service organisations and building an ‘antifragile’ organisation, rather than to interpret data according to a pre-defined theory. The paper suggests that building an ‘antifragile’ organisation, which can learn from disruptions, is possible using the Vanguard method approach. It is argued here that the Vanguard method is likely to enhance organisational ‘antifragility’ by promoting a multilevel driver for learning from stressors

- 1 macro level – clarity on the system due to the continuous analysis of customer demands received
- 2 meso level – organic structure of work place where effective learning-centred teams are built
- 3 micro level – individuals’ engagement with work and readiness to learn.

Shipton et al. (2013) have suggested that there is a need for more qualitative case study research to shed more light on the availability of particular practices and systems that progress our understanding of the concept of learning organisations. In response to this, two exploratory case studies are presented in this paper. The case studies were conducted

in the UK insurance sector service departments. The paper is focused on post-the Vanguard method application in the case study organisations, to explore its proposed relationship with building ‘antifragile’ organisations. Therefore, the research question sought to be answered in this paper is as follows.

RQ: How does the Vanguard method of service delivery system build ‘antifragility’ in service organisations?

In the first part of this paper, the concepts of organisational ‘antifragility’ and learning are further scrutinised based on a review of existing literature. Then, the Vanguard method’s philosophy and methodology are presented with a focus on its implementation principles. Next, the research methodology is explained, and the case studies of two British insurance organisations are presented. Finally, results are shown and conclusions discussed.

## 2 Antifragility: learning from chaos

‘Anti-fragility’, a term presented for the first time and famed by Taleb (2012) in his book: *Antifragile: Things that Gain from Disorder*. Taleb argues that there are many systems in this life that can benefit from disorder and disruptions up to a certain level. For example, human bones, as a biological system, become stronger when stress is exerted on them. Also, organisations, having the right mechanism, can learn from shocks and build stronger competitive advantage. ‘Antifragility’, in this sense, is defined as a property of a system that can absorb chaos and errors to learn and grow. In fact, Taleb (2012) explains that uncertain and unpredictable events are desirable for ‘antifragile’ systems, as they are seen as essential opportunities for building more strength in the system, and that depriving these systems from such events will gradually decay them; leaving them more fragile. Therefore, fragility and antifragility are not quite fixed properties; systems could be anywhere between these two absolutes. According to Taleb (2007), organisations that have built the ability to benefit from shocks are more likely to benefit from those shocks that the past did not reveal. Moreover, ‘antifragile’ systems are characterised by gaining more benefits from disorder than harm, while fragile systems is literally the opposite (Taleb, 2013). This implies that antifragile systems can be detected by testing whether disruptions have delivered more upsides than downsides (Taleb, 2012).

Taleb identifies that ‘antifragility’ as a concept is different from resilience. In engineering, resilience is defined as “the tendency of a material to return to its original shape after the removal of a stress that has produced elastic strain” (Merriam-Webster Dictionary, 2007), and in organisational theory literature, organisational resilience is defined as the ability to sense and absorb variability, surprises, and disruptions of the environment (Hollnagel et al., 2006; Lengnick-Hall et al., 2011). These definitions fail to recognise the need for systems to learn and flourish from volatility. Thus, resilient systems absorb shocks and stay the same, while antifragile systems absorb shocks and get better and stronger. Therefore, ‘antifragility’ is about going beyond resilience.

## 3 Learning organisations: advancing existing definitions

Based on the notions discussed above, the capability of organisations, as evolving systems, to become ‘antifragile’ and learn from errors and turmoil, up to a certain point,

is almost certainly going to bring in more competitive advantage and strength to excel (Hannah and Lester, 2009). This is relevant to the concept of organisational learning presented by Argyris (1977) where he defines organisational learning as the “process of detecting and correcting errors”. The concept was later energised by the work of Senge (1990), where he defines learning organisations as

“organisations where people continually expand their capacity to create the results they truly desire, where new and expansive patterns of thinking are nurtured, where collective aspiration is set free, and where people are continually learning how to learn together” (p.3).

With his exclusive internal view to learning organisations, Senge (1990) argues that there are five components for building a learning organisation, these are:

- 1 personal mastery of developing patience and viewing reality objectively by individuals
- 2 development of mental models of how individuals see the world and how they act on it
- 3 building shared vision of the future where individuals are committed to
- 4 team learning where team members engage in developing a coordinated action
- 5 systems thinking of connecting the previous four components and viewing the organisation as whole.

However, Senge’s (1990) definition overlooks customers’ role in the learning process of organisations, which has been viewed by Pedler et al. (1999) and Shipon et al. (2013) as a significantly important element for an organisation aiming at being a learning organisation. Putting customer demand in the heart of the organisational learning process provides a focus on customers’ problems and shocks exerted on the organisation, which resemble opportunities for meaningful growth (Cohen and Levinthal, 1990), and for building ‘antifragility’ (Taleb, 2012). In fact, facilitating the flow of external volatilities, such as customer problems, from the outside in inspires internal understanding of problems hidden in the system, thereby providing valuable ideas for improvement and learning (Gutiérrez et al., 2012). A focus on customer demand problems, in this sense, specially the rare problems he/she has, provides a rich source of information for the organisation to improve its operations (Pedler et al., 1999; Taleb, 2007). As it would be expected, subsequent to the definition of Senge (1990), organisational learning definitions have started to realise the importance of engagement with external environment, particularly customers, for a learning process that can ensure organisational growth. Pedler et al. (1999), for example, point out that learning organisations are those organisations that engage themselves effectively with customers in order to build internal capabilities. Following this definition, Nevis et al. (1995) portray learning from external interactions as “the capacity or process within an organisation to maintain or improve performance based on experience”. Further, Shipton et al. (2013) defines a learning organisation as one that depends on both internal stakeholders and external customers to achieve strategic renewal. However, based on the work of Taleb (2012), the definition of organisational learning adopted in this paper is the ability of the organisation to become ‘antifragile’ by regenerating itself through using volatility available in the external environment.

Other than the previous definitions, Ortenblad (2004) suggests that a learning organisation is built on four main pillars:

- 1 organisational learning; where organisations are required to continuously improve their existing systems by allowing employees to challenge the current processes to learn on how they can be improved
- 2 learning at work; where employees receive training on-the-job by other experienced organisational members
- 3 learning climate; which provides an atmosphere where employees are encouraged to experiment new ways of doing things
- 4 learning structure; which calls for building an organic organisation with a decentralised decision making authority, open channels of communication, and a team-based work.

Similar to these views of Ortenblad (2004), Slater and Narver (1995) and Shipton et al. (2013) point out that organisations would need an organic structure as an enabler for organisational learning.

#### **4 Organic structures: the advent of learning-centred teams**

Although individuals are the place where the learning process starts, Lundberg (1995) indicates that relying on individual members, alone, in the organisational learning process is not enough. The author proposes that individual members do change and, therefore, the accumulative learning process can only be protected by relocating individuals within teams. Lundberg (1995) believes that teams would learn from external circumstances only through activities and systems embraced by the organisation itself, and not by particular individuals. Maden (2012) encourages this view by proposing that learning in organisations is certainly beyond individuals' learning, as organisational learning processes would require individuals to share information and knowledge within their teams. However, Hannah and Lester (2009) argue that individuals are the crucial catalyst for the creation of a learning organisation. According to them, it is organisational organic structure that would guarantee to sustain a motivation and openness for existing individuals to learn and benefit their teams and, ultimately, their organisation. This notion is shared by Campbell and Armstrong (2013) who asserts that it is individuals who learn and acquire knowledge the organisation did not previously has. Having this view, it would seem significantly important to interlink both individual and team learning levels to enhance organisational learning.

Organic structures resemble a non-routine type of work where there is a high degree of individual authority and power at the lower levels of the organisation (Mullins, 2005). The organisation is viewed as the living organism that can adapt to the surrounding unpredictable environment in order to survive. As stated by Robey and Sales (1994) "they interpret novel situations and adopt appropriate coping responses". Consequently, organisations employing an organic system delegate a great deal of decision making authority to their employees to allow for flexibility and quick response to unpredictable circumstances (Griffin, 1999). The organisation embraces a flat organisational structure where employees relocate to be a part of a team. Gutiérrez et al. (2012) have remarked

that integrating employees within teams can enhance the organisational absorptive capacity of external disruptions to potentially facilitate organisational learning. In such structures, team members can approach each other informally as well as officially as the personal relationships comprise an important aspect for the learning organisation life (McKenna, 2006; Bhat et al., 2012). Team working facilitates approaching other departments where needed to find expertise with the required level of information to solve a problem (Courtright et al., 1989). Ultimately, organic structures facilitate an 'antifragile' workplace conducive to learning from disruptions (Taleb, 2012; Shipton et al., 2013). In fact, most of organisations today are mechanistically structured (Pellissier, 2011; Jaaron and Backhouse, 2011); employees are given low discretion on executing their own initiatives, their behaviour is also controlled to a degree that is believed to reduce their interaction with other co-workers (Mao, 2009; Jaaron and Backhouse, 2012). With this limited social interaction in the face of stressors, mechanistic operational systems lack effective team-based mechanisms that enable an organisation to build 'antifragility'. According to Taleb (2012), what is needed is a mechanism through which an organisation can build 'antifragility' and learn from its volatile environment.

## **5 The Vanguard method**

The nature of organisational learning is inherently complex; it involves the interaction of individuals, teams, units, departments, policies, processes, and systems. The more the interaction between these elements, the more the complexity would be (Hannah and Lester, 2009). Traditionally, complex systems' literature suggests that managers can focus on the parts in order to manage the whole (Botla, 2009). This reductionist approach calls for breaking a situation into smaller fragments; solving each smaller problem separately before these smaller solutions are assembled together to provide an overall solution. However, this way of dealing with problems does not necessarily provide the optimum solution for the system as a whole (Capra, 1996). Gregory (2007) argued that reductionist approach is not appropriate for organisations as it is based on silo working that limits organisational dynamic ability and necessary interaction between parts. Ackoff (1981) pointed out that managing system parts without understanding their interactions makes the system lose its essential properties, and causes managers to face unintended consequences. Therefore, if a complex context, such as organisational learning, is viewed in this reductionist way, discontinuous forces of silo working would prevent the management of organisational learning. According to Taleb (2012), the interactions between system parts are essential to produce new ideas or properties that convey information to these parts through stressors. This conceptualisation gave initiation to the new work of Seddon (2003), described here as the Vanguard method, of implementing systems design principles into service organisations. The Vanguard method is, therefore, centred on three core elements: interrelationships, dynamics, and wholeness (Jaaron and Backhouse, 2011; Seddon, 2008; Jackson et al., 2008). A detailed account of the philosophy is reported in the work of Seddon (2008) and Jackson et al. (2008), and will be explained here as well.

The Vanguard method builds upon aspects from intervention theory introduced by Deming (1982), the systems theory of Ohno (1988), and Soft Systems Methodology (SSM) developed by Checkland (1981). It is based on the view that organisations are

holistic systems serving a purpose that is “always seen in terms of its customers” (Marshall, 2010). Therefore, customer demand is the focal point for redesigning the organisational service systems and not the functional hierarchies (Seddon, 2008; Jaaron and Backhouse, 2010). The Vanguard method depicts a culture characterised by the formulation of a self-managing teams. The teams are created from the workplace itself to lead the intervention into business processes (Jackson et al., 2008). The teams require spending a considerable amount of time to understand business processes and the main purpose of the system from the customer perspective (Seddon, 2008). This begins by studying the demand coming into the business, over a period of time, to find out what matters to the customer the most, what do they want from the system. Once the purpose of the system ‘from a customer perspective’ is defined, attention is given on how the organisational parts can be linked together to deliver that purpose (Jackson et al., 2008). The study of the demand provides two different categories of demand usually available in service departments (Seddon and Brand, 2008). First, value demand which is what the service department has been established to serve and what the customers want which is of value to them. Second, failure demand which is a stressor demands that the service department was not able to serve due to the lack of information or supporting operations.

According to Seddon (2008), the Vanguard method builds a system that is highly responsive to customers. This is achieved by removing waste found in the traditional processes through the redesign of the service processes based on the customer point of view (Jackson et al., 2008). This will significantly reduce the frequency of failure demand (Jaaron and Backhouse, 2011). It is essential at this stage to continually analyse demand in order to improve internal processes that would deal with stressors (Jackson et al., 2008). Accordingly, this increases team members’ learning in the system and provides them with enough knowledge to handle demand uncertainty. Team members learning is “a cognitive precursor to adaptation” (Ilgen et al., 2005) that is necessary when faced with shocks (Chiva and Allegre, 2009). In this regard, organisational teams, operating under difficult circumstances, also need to learn from their best knowledgeable individuals, this knowledge will then be used to improve performance in the face of disruptions (Ilgen et al., 2005). LePine (2003) found that team-based structures, equipped with empowerment and openness to communicate and interact, are critically important to activate their latent knowledge to perform better when the task environment changed. Owing to this, the role of team members in the Vanguard method changes from controlled to full empowerment as the Vanguard method requires employees to be self-directed by learning and then making their own rules and decisions to absorb changes (Seddon, 2008). Eventually, this way allows for more control on service processes because data is in the hands of the people doing the work (Korkmaz, 2012), and provides creativity in responding to the system’s challenging environment (Jackson et al., 2008).

The Vanguard method embraces the principle that employees need to think, analyse, judge and make decisions on the work on hands. Therefore, team members training is not the focus in the preparation process for this kind of job, it is actually educating them on ‘why’ a failure happen and then finding ways to eliminate it from the system. To accommodate for the requirements of the Vanguard method, managers’ role shifts from command-and-control to supporters. This keeps managers very close to their employees to interact with their work when necessary. Bhat et al. (2012) provide a constructive view about the interactive leadership style and organisational learning. According to them, the capacity of an organisation to learn how to learn, to change old ways of doing things, and



to produce original knowledge is positively related to interactive leadership styles. Due to this type of relationship and due to the whole service processes being owned by team members, the structure of the organisation changes. The organisation becomes organically structured (Jaaron and Backhouse, 2011), in other words, the Vanguard method is an enabler for developing an organically structured organisation (Jaaron and Backhouse, 2010).

The above philosophy usually follows three main practical steps of ‘check-plan-do’ for implementation. These steps are summarised in Table 1.

**Table 1** Vanguard method’s three stages of ‘check’, ‘plan’ and ‘do’

<i>Stages in process</i>	<i>What is it?</i>	<i>What does it do?</i>
‘Check’	An analysis of the what and why of the current system	Provides an understanding of the system as it is and identifies waste and the causes of waste. ‘Check’ asks: What, in reality, is the purpose of this system? What is the nature of customer demand? How does the work flow? What is value work and what is waste? Why does the system behave like this?
‘Plan’	Exploration of potential solutions to eliminate waste	Provides a framework to establish what the purpose of the system should be and how the flow of work can be improved to meet it. ‘Plan’ asks: What is the purpose of the system from the customer’s perspective? What needs to change to improve performance against purpose? What measures are necessary in order to gauge improvement?
‘Do’	Implementation of solutions incrementally and by experiment	Allows for the testing and gradual introduction of changes whilst still considering further improvement. Develop redesigns with those doing the work, Experiment gradually, Continue to review changes, Work with managers on their changing role.

*Source:* Jackson et al. (2008)

Check: At this stage demand analysis is carried out. It aims at understanding the system and why it behaves in such a way that failure demand is achieved. A specially formed team, called the check team, from the workplace collates information about what customers expect and want from the organisation and what matters to them most, they need to be able to use views of different people involved in the problematic system to build the ‘real situation’ (Checkland, 1995). Once the team understands the type of demand received and how capable the system is to respond to it, it can start to map the flow of processes in the system. For this purpose, a visual representation of each operation carried out in the workplace is developed as a flow chart. Identification of waste (actions not adding any value from the customer’s point of view) present in the service operations flow is then carried out (Seddon, 2008). All processes classified as waste are marked in red on the process flow chart. While processes that add value from a customer’s point of view are marked in green.

**Plan:** This stage starts with a presentation of the findings of the check phase to explore all the possible ways through which a better flow of processes can be designed against customer demand (Seddon, 2008). This is followed by the check team redesigning the processes flow charts taking what have been learned considering the customer ‘wants’ and then mapping out the new service system design. Typically, this stage is focused on minimising non-value adding activities from a customer point of view. The final step in the ‘plan’ process is to build performance measures and the future system success criterion. This is usually how good employees are in creating a value demand and the percentage of value demand out of the total demand received (Jaaron and Backhouse, 2012).

**Do:** At this final stage the new design is used in an experimental environment with the check team using the new model after it has been discussed with the people doing the work. The new processes are induced gradually with careful observation of both employees’ reaction to it and customers feedback. The processes are tested, re-designed and re-tested again to make sure that customers get the best possible service before going fully live. This is much slower process than the check phase as the slogan at this stage is to “do it right rather than do it quick” (Jackson et al., 2008).

The Vanguard method cycle starts with the ‘check’ stage in order to show business managers the failings of their current system, and to provide them with a solid evidence for the need to change the way they think and manage things (Jackson et al., 2008). To ensure continuous improvement of the new system, the check-plan-do cycle is a continuous cycle (Seddon, 2008; Jackson et al., 2008). It is, therefore, a learning system by itself: the process of acquiring knowledge and taking action to improve the situation is continuous (Jackson et al., 2008). In addition to continuously altering business processes to improve the service offered, the Vanguard method cycle involves the identification of new demands coming in to the service department. This is followed by designing new processes to ensure dealing with new demands as value demands (Seddon, 2008).

## **6 Research methodology**

### *6.1 Research design*

Given the nature of the research presented in this paper, a qualitative exploratory case study method is used. Exploratory case studies are useful for studying a distinct phenomenon in real-life context using multiple sources of evidence (Yin, 2009). They have been regarded by Benbasat et al. (1987) as adequate research methods for exploring a topic or an area where no previous research has been conducted, or where no previous theoretical propositions have been detected (Cooper and Emroy, 1995). Therefore, the intention of this research was to provide a preliminary attempt to explore the – hitherto unknown – relationships between the implementation of the Vanguard method in service organisations and the building of ‘antifragile’ organisation that can learn from stressors. Case studies are particularly useful for dealing with ‘what’, ‘how’ and ‘why’ questions that are focused on contemporary events in a natural setting (Kyburz-Graber, 2004). Yin (2009) indicates that a researcher who carries out, at least, two case studies can have better chances of making an analytical generalisation that can stop other researchers’

scepticism about case study findings. He argues that the use of two case studies will produce a strong effect when justifying the research findings. Therefore, two case studies were chosen for this exploratory research.

## *6.2 Case study selection and characterisation*

This research inquiry took place in the summer of 2013, and covered two case study companies who are main providers of various insurance services in the UK. Their selection was in line with the work of Huberman and Miles (2002). They have suggested that when selecting a case it is more appropriate to be of the polar type or extreme situation where the phenomenon of interest is 'transparently observable'. In this research, both cases were chosen based on the full deployment of the Vanguard method in their service centres; post-the Vanguard method application in the case study organisations. The unit of analysis for the research were the relationship between the service delivery system (i.e., the Vanguard method) and the 'learning from stressors' aspect of the service centres in both cases. The companies details, as well as those of the participants, are kept anonymous and the companies will be denoted as 'Company A' and 'Company B' throughout this paper.

The service centre, in both companies, deal with pension, health or death claims, bonds, annuities, protection claims and various bundle of enquiries. 'Company A' allowed an intervention into its service centre following the principles of the Vanguard method in 2009; four years before this research inquiry. It has 100 employees who are divided into teams to deal with the aforementioned demands. The intervention at that time revealed that 68% of overall incoming demand was failure demand and that value demand was predictable. The new design focused on minimising non-value adding activities from a customer point of view. As a result of the new design, the company moved 32 processes from back office to the front end, allowing for cost reduction to back office. However, 'Company B' started a Vanguard method intervention in its service centre 18 months before this research was conducted. The service centre is a house for two main teams, the underwriting team and the front-line team who respond to phone calls about set up policies, quotes, policy renewals, midterm adjustments with brokers, and other related inquiries. At the time of the study, there were around 40 employees working in these teams. The check phase at the early stage of the intervention discovered that 46% of overall coming demand was failure demand as against to only 17% at the time of the study.

## *6.3 Data collection and analysis*

In this qualitative exploratory study, data were collected mainly through in-depth interviews with key informants in the two case study companies. A total of 19 interviews were conducted which were all tape recorded and transcribed as soon as the interviews were completed. Interviewees were a mixture of front-line employees, team leaders, middle managers, and the Vanguard method's consultants in both companies. The number of interviews was deemed appropriate as no significantly new information was achievable from extra interviews. This was in line with McCracken (1988) who found that in order to produce perceptive themes from in-depth interviews eight interviewees are needed but subsequent to that number the returns becomes minimal for the effort required. The in-depth interviews were of the 'one-to-one' type in which only one

participant was interviewed at a time. Each interview lasted for 30–40 minutes on average. Interviewees were asked questions such as “do you think your organisation is now better prepared to deal with problem?”, “do you use the lessons learned from such problems to make a better service for the future? How?”, and “do you think your organisation is a learning organisation from stressors?”. In addition to interviews, theoretical triangulation (Jick, 1979; Yin, 2009) was achieved through collecting other supplementary data such as organisation charts, service performance reports, operating protocols, and power point presentations that provided a useful source of information.

**Table 2** In-depth interviews analysis: from codes to central themes

<i>Codes</i>	<i>Issues discussed</i>	<i>Basic themes</i>	<i>Central themes</i>
<ul style="list-style-type: none"> <li>• Value and failure demand</li> <li>• Errors detection</li> <li>• Change and improve</li> <li>• Decision making</li> <li>• Empowerment</li> <li>• Communication</li> <li>• Freedom to act</li> <li>• Ownership</li> <li>• Mental models</li> <li>• Experience</li> </ul>	<ul style="list-style-type: none"> <li>• Taking account of customer needs and problems</li> <li>• Correction of detected errors as they arrive</li> <li>• Change procedure and policies if possible.</li> <li>• Building styles and structures for continuous learning</li> <li>• Team working facilitates learning</li> <li>• Open communication with other teams and departments</li> <li>• Decentralised decision making authority to make things ‘right’</li> <li>• Managers role is different</li> <li>• How detected problem is best dealt with</li> <li>• Self-development of experimenting new things</li> <li>• Experiencing effectiveness building incidents.</li> </ul>	<ul style="list-style-type: none"> <li>• Capturing learning opportunities</li> <li>• Case analysis</li> <li>• Knowledge sharing</li> <li>• Flat organisation</li> <li>• Team-based</li> <li>• Informal structure</li> <li>• Expanding employees capacity</li> <li>• Attachment to business and feeling to protect it</li> <li>• Learning behaviour</li> </ul>	<ul style="list-style-type: none"> <li>• Clarity on the whole service system</li> <li>• Effects on working structure</li> <li>• Employees’ engagement and readiness to learn</li> </ul>

The data analysis process was guided by the steps of Bryman and Bell’s (2007) for conducting thematic analysis of interviews data; these are illustrated in the following steps:

- Step 1 Coding process started as soon as the data collection process started; this has sharpened the understandings of the collected data as it arrived. Miles (1994) indicated that late coding is a major cause for weakening the qualitative data analysis.
- Step 2 The research question and interviewees’ transcripts are studied in order to shed the light on general leading theoretical topics available. These theoretical topics, also called coding schemes (Minichiello et al., 1990), were then used to list a set of words or topics that represent a general meaning of what has been said in the interviews, this is known as the coding framework of interviews analysis

(Attride-Stirling, 2001). The benefit of creating such a coding framework is the generation of a list of words which can be linked into common categories during analysis (Minichiello et al., 1990).

- Step 3 The next step involved reading again through the transcripts of interviews and coding the content. The interviews transcripts were divided into meaningful fragments to facilitate dealing with the data. Every fragment or text segment was then given a code, from the coding framework developed, that represents the meaning perceived (Attride-Stirling, 2001).
- Step 4 At this step revising the divided transcripts to find codes with common basic themes was carried out. This was done by careful reading of the coded fragments, which enabled the identification of underlying structures and connections (Attride-Stirling, 2001).
- Step 5 This final step allowed for clustering basic themes around more central themes that were used later for interpretations.

Table 2 illustrates the coding framework devised and three central themes found. These emerging themes are presented in the results section.

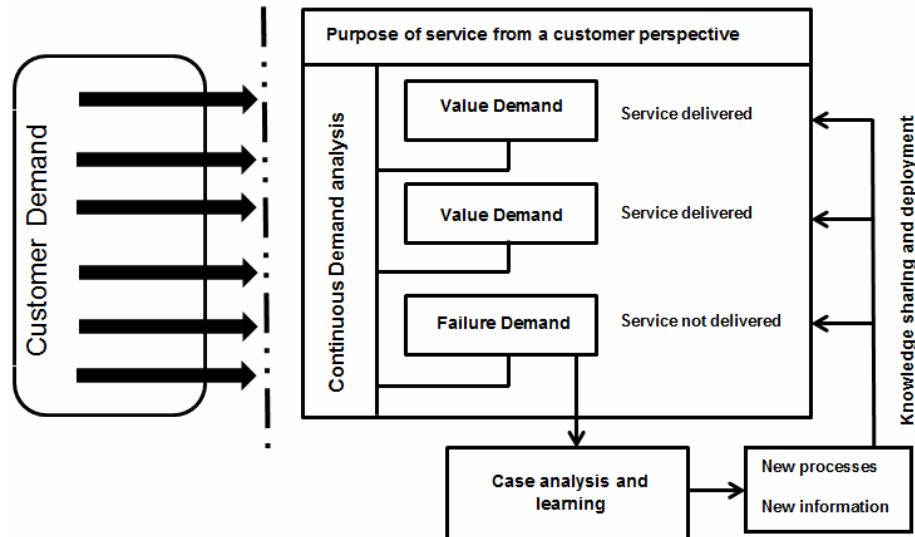
## **7 Results**

### *7.1 Clarity on the whole service system*

This theme refers to the clarity on the service system due to the continuous analysis over all aspects of demand received. Interviewees at 'Company A' have explained that employees are encouraged to log in any failure demand received into the IT system used. These logged failure demands are used by a specially created team at 'Company A' called the 'leaders' team', who are basically the leaders of different teams in the service centre. This team's role is to exploit every single failure demand received by analysing the causes that have developed these failure demands. This has helped team leaders to identify potential problems in the services offered and thus the immediate corrective measures to be taken. Interviewees have identified that employees knew that by logging failure demands into the IT system they will receive a feedback about root causes of the failure demands and their required solutions, as these were shared by their 'leader's team'. Interviewees believed that this has helped employees get a better working place where they feel they are valued.

Similarly, employees at 'Company B' were also encouraged to learn collectively from the problems received with the help of the facility of logging in failure demands received to the IT system, similar to 'Company A', with the only difference is that the Technical Operations Manager is the person responsible to study and analyse the failure demands stored in the system, before discussing them with the relevant team. This arrangement was deemed appropriate by interviewees at 'Company B' as the technical operations manager is an internal consultant to the Vanguard method with vast experience in demand analysis issues who can, then, provide adequate information and corrective measures to the relevant team.

Figure 1 shows a representation of the general processes of capturing learning opportunities as a result of receiving external failure demands at the two case companies.

**Figure 1** Capturing learning opportunities from stressors

## 7.2 *Effects on working structure*

The theme of working structure refers to the new working structure built in the case study companies after the implementation of the Vanguard method, and their level of participation in delivering an ‘antifragile’ organisation. The new working structure was found to be remarkably the same in the two service centres. Interviewees, at two case companies, have indicated that they were relocated to work within teams. A Front-line employee from the renewal policies team at ‘Company A’ commented:

“I know all the people working in my team, and I also know all the people in other teams...we now work together to solve problems, I can ask for help from my colleagues when the case is beyond my knowledge”

In this structure, employees were able to execute diversified tasks that they did not experience before. Team members’ communication is viewed as more of a support and consultation and it was favoured over other types of communication. In other words, a horizontal rather vertical type of communication is encouraged. Problems may not be passed to or given to someone else, but employees can ask for support from others with experience to solve problems, even if they are in other teams or departments. They can also seek support from their own team leaders, as the new role of middle managers is to support the work rather than to monitor employees. This was reported by interviewees, at two research sites, to change the top-down hierarchy as it was seen not suitable for this new environment of working. The new workplace, at both companies, has lower levels of management as much of the work and decisions are now made at the team members’ level. A team leader from ‘Company B’ stated:

“I spend more time now helping my team...I think I’m much closer to them now as they need my help on things they need to make decisions”

Information arising from demand problems and stressors were shared collectively on constant basis. Interviewees, at two case companies, highlighted that it is for the purpose of improving their service and operational systems the centre of authority and control is the property of front-line employees at the service centre, or any rank in the organisation where the extensive knowledge or omniscience is located. A team leader in the service centre of 'Company A' highlighted this new work structure:

"I think front-line reps (i.e. representatives) enjoy what they do, the work is very varied...they could get a customer demand with totally different nature that they can handle or ask for some help from a colleague to help if it is above their skills level...we focus on doing things right one stop and we help call reps to learn from each other when new incidents arise..."

### *7.3 Employees' engagement and readiness to learn*

This theme refers to the level of employees' involvement as a result of using the Vanguard method and how the new design enhanced employees' participation in the creation of 'antifragile' company. Interviewees, at both research companies, have regarded the ability of employees to make work decisions, open channels of communication, and freedom to act on the system as the cornerstone of employees' self-development and readiness to learn. Employees, at both companies, have explained that they are able to capture learning opportunities from the system, for the problems they receive, through the encouragement of lateral communication with other team members. This way allowed the involvement of team members, with highest level of experience, to help in formulating corrective actions that is shared with and learned by other team members.

Interviewees have also commented that reducing the hierarchical distance from their leaders and middle managers has increased their attachment to work by tapping their motivation for self-regulated learning. It was also been observed, at both companies, that employees have started to think differently about the service system they have. It is as commented by a front-line employee at 'Company B':

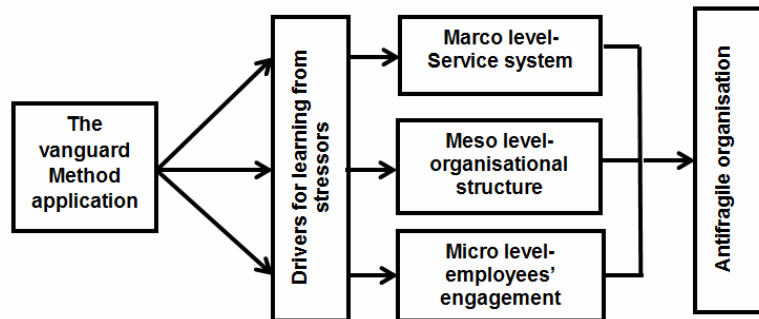
"It is very informal now....when I come across any problem at work, I discuss that with my manager, and I trust his opinion since he is more involved with the work...now I set back and think deeply into any problem I receive....to understand how people are thinking and how this problem happened....we feel that we are better thinkers and doers"

Service centre' employees at 'Company A' were able to request amendments to the information made available on their website if they found that a failure demand is caused by a customer who lacks correct and complete information. They are also able to request changes on the information provided on letters to customers, if a failure demand indicates unclear or incomplete information on letters. Interviewees also indicated that employees are able to build new processes for frequent failure demands or demands that are received for the first time. In addition to these examples, employees at 'Company B' were able to update the underwriting guidelines on the basis of receiving common questions from customers, this has helped employees to better assess the eligibility of a customer to receive their insurance products.

## 8 Discussion and conclusions

In this exploratory study, an attempt has been made to investigate building an ‘antifragile’ organisation, which can learn from disruptions, using the Vanguard method approach. While it is difficult to generalise findings from exploratory case studies, the study demonstrates an interesting dynamic of the Vanguard method that can provide an understanding of how an ‘antifragile’ company could be achieved. It is found that the Vanguard method is likely to enhance organisational ‘antifragility’ by promoting a multilevel driver for learning from stressors. This multilevel driver is presented in Figure 2 in a conceptual framework. The results from this research are discussed in the context of organisational learning literature as presented below.

**Figure 2** Multilevel driver for building ‘antifragile’ organisation



The results suggest that clarity on the whole service system, or the macro level, is the strongest theme identified through analysis of data. This is due to the fact that this theme has revealed three different levels of organisational learning that support the notion of ‘antifragility’. At the lowest level, continuous demand analysis was completely performed by front-line employees at the two case companies. This has shown that employees were responsible for identifying failure demands and other associated errors in the service. These activities add to the competencies and experience of individuals and better prepare the knowledge-base of the organisation (Shipton et al., 2013). At a higher level, employees were also able to question the current ways of processing demands, which have been classified as failure demands, by proposing different methods or processes of dealing with problematic demands in order to convert them into value demand that can retain future customers and, ultimately, flourish business. This learning level is what Taleb (2012) firmly links with an antifragile system. According to him, “anything that has more upside than downside from random events (or certain shocks) is antifragile”. However, the third, and the final, level was detected by employees support to the Vanguard method; it was evident in the results that employees recognised that they are aware that the Vanguard method has taught them to learn about their system. The results markedly show that these levels are congruent to the three types of organisational learning presented by Argyris and Schon (1978). Authors explain that organisational learning is composed of three different interlinked types. Single-loop learning that occurs when the organisation identifies errors and seeks to correct them. Double-loop learning occurs when organisational members question and modify existing methods of doing the work and other related activities; in their search for better ways. Finally, deutero-learning



that occurs when the organisation learn how to actually do single-loop learning and double-loop learning. This means identifying facilitating structures and systems required to promote learning (Maden, 2012).

Perhaps the focus of this theme on taking into account the customer in the learning process is the most significant element. The results show that the Vanguard method builds work systems against customer demands. This is also vastly present in the continuous demand analysis process. Seddon and Brand (2008) have emphasised that customer demand is central in the Vanguard method redesign phase. This is contradictory to many service innovation and redesign projects where the customer engagement is often not given enough room in the service reengineering projects. Taking customer into account, at both companies, ensured that learning is meaningful for the case study organisations, which signal that learning is directed to the strategic goals of the organisations by continuously seeking to improve the service of the customers. This is exactly the definition presented by Pedler et al. (1999) for learning organisations; effectively engaging customers 'while simultaneously building internal capabilities'. It was evident by the results that front-line employees recognised interaction with customers as an essential learning activity, and that they count on this activity to create informal learning. In support of these findings, Theoharakis and Hooley (2008) explain that it is only through interaction with customers that organisational members would be able to expand their knowledge on what the organisation still need to learn about its external stressors. Similar to the research results, Shipton et al. (2013) identify that understanding customer problems would require a more externally oriented attitude at the front-line employees' level to promote learning, and therefore, unleash antifragility capability.

Regarding the theme of effects on working structure, also viewed as meso level, the two research companies have shown dramatic changes in their organisational structures and the way the work is done post-the Vanguard method application. This change might be due to the fact that a service department is typically exposed to a greater demand variety and disruptions from the customer than a manufacturing department (Seddon and Brand, 2008; Seddon, 2003). Therefore, mechanistic top-down structures, which emphasise standardisation, the elimination of variation, and leaders continuous monitoring, were not found at the two case companies. On the contrary, leaders were viewed as part of the workforce as they had an active role in supporting front-line employees when a problem is faced. Leaders can enhance organisational 'antifragility' by maintaining a tendency of employees to feel equally valued within their environment, while also maintaining a tendency of different employees to collect in diverse teams (Hannah and Lester, 2009). It could also be elicited from results that the Vanguard method approach recognises the importance of random events and failures as a learning opportunity. These opportunities are achieved at both case companies through decentralised, team-based informal structures. Team work has been found to lead knowledge sharing and learning emergence from stressors due to the quality of decisions made on received failures. These views are shared by Larson et al. (1998) who link learning-oriented behaviour of organisations during chaos with information sharing across team members. Taking an organisational learning level, the two service organisations studied were able to absorb the aforementioned randomness, variety, and failures in customer demand. For this to happen, service organisations had to become adaptive organisations often referred to as 'organic structures' introduced by Burns and Stalker (1961). It was recognised in this theme that it was possible for employees to

absorb demand variation and randomness as they are given enough time to make work decisions. It is as described by Taleb (2012), individuals having the right tools, tend to learn better from acute stressors if they have enough time to think and analyse the situation after the stressor. According to him, this is a condition for building 'antifragility'. In addition, it is suggested that employees were trusted when working on received failures and building relationships with customers. As a result, employees would naturally build a sense of freedom and responsibility (Jaaron and Backhouse, 2011). Giving employees' freedom to act on the system suggests that a loose orientation by leaders would be essential to activate latent learning capabilities to face business stressors.

The results find consistent strong effects of the third theme; employees' engagement and readiness to learn (i.e., the micro level), on the ability of both organisations to learn. With 'Company A' and 'Company B', both, have encouraged lateral communication between their employees, knowledge creation has been enhanced. According to Phelps et al. (2012), knowledge creation is cornerstone for organisational learning, and that social relationship at the workplace is an integral part for knowledge creation. These results are also consistent with the views of Taleb (2012) who perceive complex systems (i.e., organisations in this case), with high levels of interactions, as essential for creating strength and powerfulness, and that depriving such systems from interaction will bring a great deal of fragility to the system. Sharing knowledge at the workplace, at both case companies, has proved to increase employees' self-development. Shipton and Zhou (2008) support this view by indicating that knowledge can only be generated by combining, what they call, 'explicit' and 'tacit' knowledge. Explicit knowledge is that type of knowledge that is transmissible using available channels of communication, whereas tacit knowledge is the cognitive and intellectual insights that individuals were able to personally gain from experiences, and these are, therefore, not transmissible through conventional channels of communication. The observation that employees at both case companies, and particularly at 'Company B', have developed different thinking methods to try and benefit from incoming problems indicates that these employees have developed different mental models of how organisational learning process is best conducted. It is as Campbell and Armstrong (2013) described, individuals' mental models are more of an intermediary element that can translate individuals' learning into organisational learning. Hannah and Lester (2009) argue that such mental models are able to connect different intellectual insights held in employees' memory that allow individuals to adapt to the stressors of random and unfamiliar situations using offerings of organisational system.

The findings of this research have some significant contributions for practitioners and researchers. First, while the majority of literature has linked organisational learning with building internal organisational variables and capabilities (Pedler et al., 1999; Teece, 2007; Shipton et al., 2013), this work has shown that organisational learning can significantly be enhanced by effectively involving external variables, especially customer stressors, while simultaneously building three different levels of internal variables. The paper suggests that building an 'antifragile' organisation, which can learn from disruptions, is possible using the Vanguard method approach. The findings hold that the Vanguard method is likely to enhance organisational 'antifragility' by promoting a multilevel driver for learning from stressors, these are:

- 1 the macro level of clarity on the whole system due to the continuous analysis of customer demands received
- 2 the meso level of organic structure of work place where effective learning-centred teams are built
- 3 the micro level of employees' engagement with work and readiness to learn.

A second contribution of this work is the advancement of existing definitions of learning organisations, which are only focused on building internal organisational capabilities without taking into account the external environment in the process of organisational learning. The paper presents a new definition which explicitly engages external environment' disruptions in the process of promoting 'antifragility' of learning from stressors. The organisational learning definition presented here is the ability of an organisation to become 'antifragile' by regenerating itself through using volatility available in the external environment.

Based on the contributions highlighted above, this study also enables us to draw some managerial implications. In the current business environment, there is a paucity of tools, and relatively little is known about how employees' engagement can be nurtured to face global fierce competition and improve performance (Sahoo and Mishra, 2012). The results show that continuous demand analysis, performed by front-line employees, provides knowledge on how the competencies and engagement of individual employees can be positively influenced. This can be very useful for managers who find themselves faced with the decision of choosing between various options for managing their employees' engagement and work experience. Further, the new design of the service delivery system was found to better prepare the knowledge-base of the organisation by facilitating conversations between employees, and promoting knowledge sharing across teams. These are necessary activities when a manager is supervising the knowledge-creating process on the level of organisations. They explain how an organisation should motivate individual employees who create knowledge, and what type of relationships they should build between themselves and with the outside environment.

## **9 Research limitations and future work**

Although this study has a number of significant insights and contributions, given the nature of exploratory research work presented, the findings from this research cannot be generalised. On the other hand, lack of prior research studies on the topic of 'antifragility' provided a difficulty in attempting to suggest grounded theory development based on the findings (Cooper and Emroy, 1995). Nevertheless, this limitation served as an important opportunity for the need of this type of research. However, this study also provides a foundation for future research into the concepts of organisational learning from stressors and 'antifragility'. It would be valuable for future research to further explore the utilisation of the Vanguard method in other industrial sectors, in order to understand the appropriateness of this method in other working environments, and the extent to which they impact the dynamics of building 'antifragility' into those industrial sectors. There is also a need for future empirical research to quantify the impact of building an antifragile company using the Vanguard method on the financial performance of organisations and their competitive advantage; by developing economic models that capture the financial

rewards of antifragility. It is also recommended that an extension of this study is required to develop instruments that can measure the construct of antifragility in organisations implementing the Vanguard method. These instruments would be important to guide the attention of strategic direction; especially in environments where customer demand is highly turbulent.

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