

# Enhancing service organizations resilience through systems thinking

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## Abstract

This paper explores the relationship of applying systems thinking for service delivery design with enhancing organizational resilience. Two case studies were conducted in two British service organizations. Results show that systems thinking operationalized two-dimensional determinants for improving organizational resilience; organically structured organization, and highly affectively committed employees.

**Keywords:** systems thinking, organizational resilience, service operations design

## Introduction

Previous research has proposed conceptual models that illustrate how organizations respond to discontinuities (Staw et al. 1981), it has also identified human, operational and financial resources, and other factors necessary for organizations to achieve resilience (Bennis and Thomas 2002, Hamel and Valikangas 2003, Sheffi and Rice 2005). Resilience, in this sense, is a multidimensional and multifaceted concept (Ponomarov and Holcomb 2009), as it resides in both individual and organizational levels (Burnard and Bhamra 2011). Powley (2009) indicated that individual resilience is defined as an individual latent capacity to recover from crisis, and that people relatedness to one another in adversity is the platform for such latent capacity to be activated. Employees who enjoy open communication and are trusted might develop a high degree of commitment and positive affect to their organization, and that this commitment can be employed when responding to adverse events to build a resilient organization (Brass 1992, Powley 2009). Arguably, employees' affective commitment is on top of the desired core values that an organization wants their individuals to develop (Hunt et al. 1985, Jaaron and Backhouse 2011a).

However, there seems to be scarcity in the current literature of resilient models of operation that can amalgamate these two interlinked levels (i.e. individual and organizational levels). This paper aims at closing this gap by introducing an innovative

consultancy-led systems engineering approach for service delivery. This approach is developed by Vanguard Consulting in England (Seddon 2003). The term “systems thinking” will be used to describe this service delivery system throughout this paper.

While this system has so far received little attention in the academic literature, it is getting a significant take-up in the service sector, where it offers a considerable impact on improving the efficiency and effectiveness of organizations (Jackson et al. 2008, Jackson 2009). Systems thinking is centered on three core elements: (1) interrelationships of employees interaction and social exchange, both within and between organizational parts, (2) dynamics of the organization that requires a significant amount of coordination, and power delegation to employees, (3) wholeness of the organization where departments are dependent on each other and the whole to guarantee the interconnectedness of people (Jaaron and Backhouse 2011c, Seddon 2008, Jackson et al. 2008). Therefore, systems thinking is an enabler for developing an organically structured organization (Jaaron and Backhouse 2010). The paper suggests that a well-designed service department, using the systems thinking approach, is likely to enhance organizational resilience ability based on two-fold by-products of the service design; high employee’s affective commitment and organizational organic structure. Therefore, the research question sought to be answered in this paper is as follows:

RQ: How does systems thinking approach for service delivery system enhance organizational resilience?

Two independent case studies are presented in this paper. The case studies were conducted in the UK housing sector service departments. The paper is focused on post-systems thinking application in the case study organizations, to conceptualize and analyze its proposed relationship with enhancing organizational resilience.

### **Organizational resilience**

There is a growing popularity, in recent years, for the concept of organizational resilience as an indispensable trait of an organization to overcome serious challenges (Sheffi 2005, Chan 2011). Due to the fact that discontinuities and other environmental turbulences can have a direct impact on organizational ability to deliver substantial products and services to customers (Juttner 2005, Burnard and Bhamra 2011), efforts are exerted by organizations to generate continuity and contingency plans (Cerullo and Cerullo 2004); however, it is argued that unless the response is instantly intuitive and can help in continuously monitoring the operating system, continuity and contingency plans will not work (Seville et al. 2006). It is as reflected by Vogus and Sutcliffe (2007), resilient organizations, facing serious challenging conditions, should swiftly and spontaneously adapt and adjust their operating systems to cope with threats. Moreover, it is not possible for organizations to exactly predict the future; building organizational resilience capability is therefore the key for preparedness and survival (Hamel and Valikangas 2003, Ates and Umit 2011).

The definition of organizational resilience adopted in this paper is the ability of an organization to adapt to the requirements of the surrounding environment and being able to effectively develop new capabilities to absorb and manage environmental variability (Coutu 2002, Hamel and Valikangas 2003, McDonalds 2006). This is closely related to the work of Hollnagel et al. (2006) who defined organizational resilience as the ability to sense, adapt, and absorb variability, surprises, and disruptions of the environment. These

two definitions recognize the need to look beyond mere restoration by continuously leveraging organizational resources through developing new individuals' capabilities to learn from current crises and build better preparedness (Lengnick-Hall et al. 2011). It is in this sense that organizational resilience is closely attached with individual resilience (Chan 2011, Mallak 1998, Coutu 2002). According to Lengnick-Hall et al. (2011), enhancing the resilience of an organization is a multilevel collective task that emanates from the capabilities and behavior of core individuals within a well-designed organization. However, core individuals can only develop willingness to contribute to their organizational success if they are committed, since committed employees are more likely to find creative ways to protect and improve their working processes (Hartel et al. 2003, Pellissier 2011). This highlights the importance of having an organic systems approach to the work where there is a high degree of individual authority and power at the lower levels (Mullins 2005), and where employees are expected to develop a strong affective commitment with their organization (Jaaron and Backhouse 2011a, Elloy 2012).

This paper builds on the work of Lengnick-Hall et al.(2011), who proposed that organizational resilience is embedded in a set of individual level attributes and organizational level processes. It also builds on the work of Chan (2011), who linked resilience attainment in organizations with organic structure adoption. Therefore, it is argued in this research that the employment of systems thinking (explained in the next section) to service business operations, will operationalize a two dimensional determinants for improving organizational resilience; an organically structured organization (i.e. organizational level), and highly affectively committed core employees (i.e. individual level).

### **Systems thinking: Philosophy and methodology**

Systems thinking is based on redesigning service operations around customer demand instead of functional hierarchies (Seddon, 2008). Customer demand understanding process begins with analyzing customer demands over a period of time to collect information about what customers want and expect and what matters to them most. The need for analyzing customer demands stems from the fact that a comprehensive understanding of the transformation processes in the service system needs to be unequivocally presented before interpretations about the situation are made (Checkland, 1981).

Customer demand is analyzed on the basis of two different types usually available in service departments (Seddon, 2008). First, value demand- is what the service department has been established to serve and what the customers want which is of value to them. Second, failure demand- is the demand that the service department was not able to serve due to the lack of information or supporting operations. The findings of customer demand analysis phase help to explore all the possible ways through which a better flow of processes can be designed against customer demand. This is followed by redesigning the processes flow charts taking what have been learned considering the customer "wants" and then mapping out the new service system design. The most fruitful way to make full use of systems thinking concept is through the use of a team who is basically from the people facing the problem at work and using the system (Checkland, 1981).

Typically, the new service design is focused on minimizing non-value adding activities from a customer point of view. The new design is used in an experimental

environment by 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 customer 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 in the service department. However, to design against customer demand is to be more responsive by providing a solution for customer demands at the first time of contact, thus being more productive. Therefore, systems thinking focus is shifted from conventional service measures (i.e. targets and statistics) towards the percentage of one stop service and demand analysis. This is supplemented with the managers continuous endeavor to further improve service operations to reduce, and ultimately prevent, repeated failure demands.

Systems thinking integrates the decision-making processes with the work itself (Jackson et al., 2008). This way allows for more control on service processes because data is in the hands of the people doing the work, and provides ability and creativity in responding to the system's surrounding environment (Jackson et al., 2008). However, the success of systems thinking is based on achieving economies from understanding the flow of the work, and not from the scale of production (i.e. quantity of transactions). Measures used are built in so they automatically tell you what is happening. These measures are usually centered on the concept of how good the service is in achieving the purpose and absorbing the demand variety. When demand variety is absorbed service productivity increases. Systems thinking absorbs variety by making intelligent use of the empowered employees (Jackson et al., 2008). The result is a self-adapting system (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 resilience and creativity in responding to the system's challenging environment (Jackson et al. 2008). This is also reflected in the work of Vogus and Sutcliffe (2007) who indicated that such system characteristics is essential for developing a capacity for resilient organization.

### **Affective commitment and organizational resilience**

Affective commitment is defined by Meyer and Allen (1991) as "*a measure of the employee's emotional attachment to the organization, the strength of identification with the goals of the organization and strength of commitment to its success and continuous improvement. The employee remains a part of the organization because s/he wants to do so.*" In this regard, research has proved that affective commitment is of particular importance for organizational success (Herscovitch 2002, Gong 2009). Further, affective commitment has been found to have the greatest impact on individuals' performance, on-work behavior and ultimately organizational resilience (Porter et al. 1974, Shum et al. 2008). Meyer et al. (1998) have demonstrated that employees' affective commitment is significant in times of instability and change, as it relies on individual resilience to save organizations a tremendous amount of time, effort and monetary resources usually invested during organizational turmoil (Jaaron and Backhouse 2011b). This evolves the idea that resilience is an organizational capability that emanates from its individual employees by rapidly reconfiguring organizational resources to quickly respond to unpredictable events (Ates and Bititci 2011). It is as explained by Pellissier (2011); it is

only through a committed and creative workforce that an organization will be able to overcome disruptions and adversity.

In fact, affectively committed employees have the ability and willingness to do extra efforts on behalf of their employer to do an exceptional job of protecting operational stability (Mowday et al. 1979, Mathieu and Zajac 1990, Meyer and Allen 1991, Mowday et al. 1982). Day and Gu (2009), drawing upon the work of Fredrickson's (2004) "Broaden-and-build theory", have explained the mechanism through which employees with positive emotions, such as affective commitment, can promote organizational resilience. According to them, these positive emotions are 'banked' and 'stored' and they are able to functions as reserves in time of adversity. This pays a significant attention to the value of employees' affective commitment, as a construct, to respond to organizational threats.

### **Research sites and methodology**

In order to empirically explore systems thinking relationship with enhancing organizational resilience, two case studies were conducted in the UK housing sector companies that have partnerships with two different city councils. The first case study was carried out at Kier Stoke. The firm is one of the leading companies in building maintenance and repairs services in the north of Staffordshire County in England. The company underwent a systems thinking intervention in May 2010. The intervention covered empty properties management and repairs handling service in conjunction with Stoke-on-Trent City Council Housing Management Services. The second case study was conducted in Incommunities; one of the large housing associations in the north east of England. The company started a systems thinking intervention in September 2010 which has covered responsive repairs services and empty properties management. The intervention was deemed necessary as the customer satisfaction was noticeably low.

The mixed methods design (Tashakkori and Teddlie 1998) is used in this research as the technique for conducting the research process. Four main sources of qualitative and quantitative data have been employed; these are observations, semi-structured interviews, questionnaires, and documents (Bryman and Bell 2007). Overall, 19 Semi-structured Interviews were conducted. Observations and notes were recorded to supplement the data collected through interviews. Furthermore, the nine-item Organizational Commitment Questionnaire (Mowday et al. 1979) was piloted in the case studies to measure the affective commitment among core employees. This questionnaire consisted of fifteen items - later shortened to a nine-item version which was found by many researchers to be superior in measuring affective commitment (Allen and Meyer 1990, Mathieu and Zajac 1990, Meyer and Allen 1991).

### **Data analysis and results**

The data analysis was carried out at two different levels. Firstly, interviews and other qualitative data (i.e. observations and documents) were analyzed to explore the systems thinking benefits to resilience at the organizational level and, secondly, the nine-item OCQ was analyzed to identify the relationships between systems thinking employment and individual employees' resilience. The process of analyzing interviews followed Bryman and Bell's (2007) considerations in coding in order to achieve central themes from qualitative data. Two central themes emerged and these are presented below:

### *Theme1- self-adapting service system*

Interviewees at Kier Stoke stated that unexpected property repairs are now being completed at a time that is determined by the customer, in an average of 74 hours as compared to up to 100 days before the intervention. As a result, Kier Stoke capacity has increased, allowing the organization to handle more demand. Similarly, the systems thinking intervention at Incommunities was able to help reduce the end to end average service time of repairs to only 29 hours including unexpected demands, and the failure demand is down to 4% as opposed to 48% before the intervention. Interviewees indicated that they are now able to deal with challenging situations by making intelligent use of the empowered employees who can act on the system operations in the way they deem necessary. Therefore, systems thinking is viewed by interviewees as a self-adapting system.

### *Theme2: Employees psychological domain*

According to interviewees in both sites, employees now have opportunities to develop their working skills by handling a wide range of challenging demands on daily basis; employees are evaluated on their ability to solve business challenges at early stages of detecting them. Interviewees explained that individuals working in this environment have a feeling of belonging and attachment with the workplace. It is as reflected by interviewees; those psychologically attached and experienced employees are more able to quickly point out organizational resources necessary to overcome disruptions in business operations. While interviewees acknowledged the importance of individuals' psychological domain, they have also regarded the individual ability to play within a well-organized team as an important enabler for creating a resilient organization. They indicated that each individual is a part of a team who shares the responsibility of the work. The team has no hierarchy of control thus allowing the team to identify the right person to solve a particular problem, and also the individual to seek help from the experienced colleagues, if needed, to overcome disruptions. The Majority of interviewees depict this as a culture characterized by the formulation of a self-managing team where the supervisor is more of a source of feedback and advice. Interviewees explained that open channels of communication between team members and other departments is significantly important for readiness of information which they considered as one of the determinants for a resilient organization.

### *Measuring employees' affective commitment*

The nine-item Organizational Commitment Questionnaire (OCQ) was used at the two research sites to measure the level of employees affective commitment. A total of 117 office staff in the two research sites were available at the time of the questionnaire, 101 questionnaires were completed and submitted electronically targeting 86% response rate. The results show a high level of affective commitment among office staff in the two research sites with an overall mean of 4.060 for the nine items out of a maximum score of 5, where a return of 3.0 would reflect a lack of affective commitment among employees (Porter et al. 1974), and where values of 3.5 are typical in many organizations (Jaaron and Backhouse 2011a). Figure 2 provides a visual representation for the level of affective

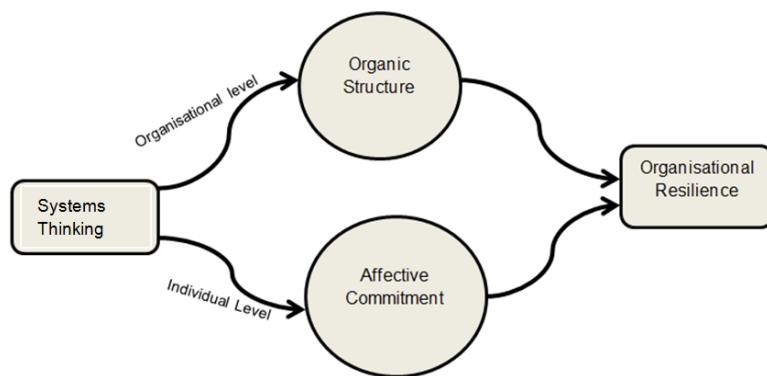
commitment among employees in both research sites as opposed to the levels where lack of affective commitment is indicated.

*Table 1- Measuring employees affective commitment level.*

Item	Mean	Standard Deviation
1. I am willing to put great deal of effort beyond that normally expected to this organization be successful.	4.458	0.721
2. I talk up this organization to my friends as a great organization to work for.	4.042	0.908
3. I would accept almost any type of job assignment in order to keep working for this organization.	3.675	0.924
4. I find that my values and this organization's Values are very similar.	4.000	0.722
5. I am proud to tell others that I am part of this organization.	4.083	0.830
6. This organization really inspires the best in me in the way of job Performance.	3.917	0.974
7. I am extremely glad I chose this organization to work for over others I was considering at the time I joined.	3.917	0.830
8. I really care about the fate of this organization.	4.542	0.588
9. For me, this is the best of all organizations for which to work	3.908	0.908
Overall Mean	<b>4.060</b>	
Internal Consistency (coefficient $\alpha$ )	<b>0.922</b>	
Confidence Interval @ 95%		

## Discussion and conclusion

This paper proposes that the employment of systems thinking to service delivery design can amalgamate two interlinked levels by operationalizing a two-dimensional determinants for improving organizational resilience; an organically structured organization (i.e. organizational level), and highly affectively committed core employees (i.e. individual level). The paper also demonstrates the factors underpinning the enhancement of organizational resilience at these two levels. These sets of relationships are assembled in Figure 1 in a conceptual model.



*Figure 1- Two-dimensional determinant for organizational resilience.*

The paper empirically contributes to the construct of organizational resilience by answering the research question posed at the beginning of the paper through the findings of the two case studies conducted. At the organizational level, the results of the two case

studies show that systems thinking application provides organizations with the characteristics of organic structures. It was found that departmental integration is widely promoted in such an environment, also open channels of communication between the service department and other business units affected by its work were established. Formal and informal communication at both employees and managers' level allowed for significant information sharing to support organizational attempts to survive and grow during times of adversity. Further, the absorbent design of the new service system at both case studies have created an adaptive organization, able to absorb business disruptions completely depending on employees' freedom to act and make decisions to provide the right things at the right time. Interestingly, this created a collective behavior of individuals and allowed them to robustly respond to unexpected events, and to implement adaptive responses early. However, the offerings of systems thinking to employees psychological domain has contributed to the development of employees' sense of job ownership and promoted feeling of belonging and value to the work place. This is because systems thinking, at both case studies, allows employees to steer the work rather than being steered. They rely on their innovation and intelligence to make decisions regarding unexpected situations. Therefore, employees can decide what and how to do the work as long as they are "within the boundaries of their obligations to the organization" (Hammer and Champy 2001). The employer ability to diffuse power to be at the employee level has been found vital to develop these positive emotions. These dimensions of the psychological domain are stored to later function as reserves in times of business adversity.

Results show that individuals have developed high levels of affective commitment with their organization. From the perspective of psychological resilience, it is only through committed individuals who are equipped with the right resources that organizations will succeed in recovery and development from adversity (Pellissier 2011). This research recognizes that affectively committed individuals usually activate their latent accommodative capabilities to face business stressors, and that they are more able to think "outside of the box" to generate creative ideas to help the business recover. In line with the literature of human resources management, the two case studies findings suggest that leveraging affective commitment among individuals builds respectful interactions between team members and other organizational communities. Respectful interactions promote informed intimacy between individuals and are viewed as a key enabler for developing contextual elements that enhance organizational resilience.

This research has examined a two-level mechanism through which organizational resilience can be enhanced. While the majority of existing literature on organizational resilience has extensively combined the development of resilience with social exchange theories (Powley 2009, Lengnick-Hall, et al. 2011), and to a less degree with business management systems (Sutcliffe and Vogus 2003, Stewart and O'Donnell 2007, Ates and Bititci 2011), this research has shown that organizational resilience could potentially be enhanced through the type of service system structure used. Therefore, if organizations attempts to develop organizational resilience on the basis of social interactions only within an inappropriate organizational structure, then these attempts will not help in fulfilling the organizational level element as the focus on social interactions (i.e. individual level) needs predefined channels of communications that is only protected by a legitimate structure.

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