

A Service Value Chain Co-Creation Strategy for Citizen-Centric Organizations

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Abstract. This paper proposes a knowledge-based strategic framework for Service Value Chain Co-Creation (SVCC) in public sector organizations. It adopts an exploratory research design that uses a descriptive research method based on the literature review of relevant studies. The proposed model is rooted in knowledge management (KM), service value chain, and Business Processes Re-engineering (BPR). The integrative citizen-centric SVCC framework demonstrates how public service organizations and citizens get involved, engaged, and participate in service value co-creation. The SVCC framework proposes to capture data from citizens as input, subjects the data to various processes to create information, and offers knowledge-based customized SVCC. This research seeks to help managers focus on re-designing services and offering personalized opportunities to create greater value co-creation. The study could assist in developing the training skills required for service personnel to build effective relationships with citizens, leading to service value co-creation, satisfaction, trust, and confidence in public sector services.

Keywords: value chain; service co-creation, process innovation, public service.

1. Introduction

The world's competition base is shifting the world's economy from a traditional toward a knowledge-based one. A knowledge economy enjoys resource abundance, intangibility, inimitability, and diminishing marginal cost. A traditional economy is known for resource scarcity, tangibility, limitability, an increasing marginal cost, and decreasing marginal utility. Emerging economies have a greater realization, particularly of opportunities created by creating, acquiring, distributing, and using organizational knowledge as a non-depleting resource for economic development.

Using knowledge to improve efficiency and effectiveness triggered organizations to find new ways of utilizing their expertise in devising or enhancing their practices (Awad and Ghaziri, 2004). As knowledge is one of the principal resources in service-oriented firms, practical usage of knowledge resources is a prerequisite to gaining a competitive advantage. The competitive advantage of imitable resources is short-lived and may soon be rapidly imitated by a capable rival or made obsolete by a competitor's innovation (Al-Shammari, 2009).

ICTs are also fundamental to improving process efficiency, effectiveness, and flexibility of service delivery. As part of service delivery processes, data are collected and stored in centralized databases or warehouses for analysis and decision-making. Decision-making is timelier and more accurate because data are collected and stored instantaneously. The extensive use of ICTs makes it easier to coordinate functional units. ICTs tie people, processes, and organizational units (Pearlson and Saunders, 2019). The usage of the Fourth Industrial Revolution (4.0 IR) technologies, Internet of Things (IoT), artificial intelligence (AI), blockchain, and big data, in public facilities, medical services, and management platforms is increasing (Lee, 2021; Ju and Park, 2022; Kyun and Jang, 2022).

Public sector services can be regarded as a critical factor for the competitive development and the growth of 'country systems' such as national economic, social, and industrial systems (Rapcevičienė 2014). Citizen satisfaction is becoming a popular means of measuring performance management in public service organizations as citizens are customers concerned about public goods and services (Collins et al., 2019).

Public sector service organizations are exploring new ways to integrate processes into a citizen-oriented response strategy that develops a high value for citizens/clients, i.e., the SVCC approach. Successful SVCC strategy requires a transformation of organizations from "product-centric" to "citizen-centric," from "vertical" to "network" structure, from "individualistic" to "collective" work, from "hoarding" to "sharing" culture, from "rule-based" to "result-oriented" practices, from "functional" to "process" structure, and from "centralized" to "distributed" computing.

The paper proposes a knowledge-based citizen-centric integrative framework for the SVCC strategy to leverage distinctive core competencies (DCCs), i.e.,

knowledge, to efficiently deliver personalized new or revised value services to maximize citizens' experience. The proposed SVCC strategy seeks to leverage citizen network relationships to create customized knowledge and make intelligent decisions that create value-adding services and client satisfaction, trust, and confidence in public sector service organizations. The paper is structured as follows: it lays down the conceptual foundations and methodology, presents results and discussion of the proposed framework, and ends with contributions, recommendations, implications, limitations, future studies, and conclusions.

2. Literature Review

Porter (1985) used the idea of a value chain to show how companies add value to their raw materials to produce products or services for customers. Value chain manager's <https://www.investopedia.com/corporate-finance-and-accounting-4689821may> look for ways to cut back on shortages and prepare product plans to add value to the customer. Porter's value chain includes core and support business activities. The value chain consists of the following primary activities: inbound logistics, operations, outbound logistics, marketing and sales, and service. The value chain activities allow a company to create value exceeding the cost of providing its goods or services to customers. Maximizing the activities in any of the five activities enables a company to have a competitive advantage over competitors in its industry. The primary value chain also requires these support activities: infrastructure, human resources management, technology development, and procurement (Porter, 1985).

Public sector organizations play a crucial role in value creation for their country by providing quality services, creating public goods, competitive development, and ensuring the county's growth. Therefore, the main issue for the public sector organizations is to create better value through offering value-adding services and meeting needs provided by citizens, private organizations, and other public bodies (Alberto, 2013; Rapcevicene, 2014). Heintzman and Marson (2005) offered a new way of thinking about Bouckaert et al. (2004) to improve trust and confidence in public sector service institutions by focusing on the service delivery role in enhancing people's performance and citizen/client satisfaction, trust, and faith. They offered the 'public sector service value chain' model, drawing on the work of Heskett et al. (1994, 1997) in the private sector. They provided evidence for links between employee engagement (satisfaction and commitment) and citizen satisfaction with service delivery and between citizen satisfaction and citizen trust and confidence in public institutions.

Buell et al. (2020) studied the role of the concept of operational transparency in enhancing people's trust and engagement. They conducted three experiments that revealed that operational transparency increases trust and engagement through consumers' increased perceptions of effort by the government and increased

perceptions that engagement is impactful. Responsiveness helped increase feelings of personal efficacy, which boosts willingness to engage.

The SVCC may be helpful to increase the social and economic capital that translates into an improvement in the life quality of citizens and productivity of enterprises, thus leading to increased competitiveness of the whole country. The performance of public services is usually measured according to citizen satisfaction manifested in the ability of organizations to meet the expectations of all users and the cost-effectiveness of services. However, one of the main problems in measuring performances is to assess the results achieved in terms of impact on the community concerning the resources used. Furthermore, evaluating performance factors, such as effectiveness, efficiency, equity, transparency, ethics, social sustainability, and quality of services, looks extraordinarily complex due to the non-competitive nature of the public sector services in resource allocation (Alberto, 2013; Rapcevicene, 2014).

In public sector organizations, SVCC is an innovative approach in which service providers co-create unique services with customers and other stakeholders to reduce costs, enhance client satisfaction, and improve performance. It enables service innovation by developing ideas that might help public sector service organizations through personalized experience, feedback, learning, and word of mouth. In the experience economy, customers no longer buy experiential service value; they consume experiences (Buxton and Michopoulou, 2021). Therefore, public organizations could benefit from this approach by capturing data from citizens through appropriate channels and conveying information or documents to the target audience or customers.

Customer Relationship Management (CRM) is a strategy that has flourished in recent years that integrates order and sales, marketing, and service processes to establish a profitable and longer relationship with customers. CRM itself should not be seen as a technological solution, although ICT is required to integrate customer-facing processes. CRM content technology, such as online transactional processing (OLTP) and online analytical processing (OLAP), enables a company to efficiently combine a large volume of customer information and transform this information into helpful knowledge. CRM contact technology allows customer interaction to provide value and make it easier for customers to do business with the organization (Al-Shammari, 2009).

Citizen Relationship Management (CiRM) is a new discourse and practice inspired by the private sector, which has become a benchmark for public institutions at different government levels. The root of CiRM is CRM, a business philosophy to establish, maintain and enhance relationships between customers and organizations by integrating technology, people, and processes (Payne and Frow, 2013). It is a managerial philosophy adopted worldwide to enhance the relationship between governments and citizens. It represents the efforts of all levels of government in

quickly and accurately answering citizens' needs requests, and inquiries, promoting changes in the public sector policies, practices, and procedures (Shaikh and Khan, 2014). The purpose of CiRM is to help managers face the challenges regarding service provision, accountability, and interaction with citizens, private companies, and other parties that intermediate the relationship between government and society (Larsen and Milakovich, 2005).

KM is a high-level approach to outlining the processes, tools, and organizational and technological infrastructure needed to manage knowledge gaps or surpluses (Zack, 1999a). KM strategy begins with a vision of strategic knowledge and capitalizing on intellectual resources and capabilities that impact organizational performance. The next step is to establish a link between organization and knowledge strategies. Strategy formulation entails setting goals and objectives (what an organization must do) and strategic auditing gap (what an organization must do versus what it can do). KM strategy, in turn, should specify knowledge requirements (what an organization must know) and audit knowledge gaps (what an organization must understand versus what it already knows) as related to organization strategy (Zack, 1999b; Hofer-Alfeis, 2003).

Customer data or information is the medium that binds customers to organizations (Chiang, Yang, Koo, and Liao, 2020). The quality of data, information, and knowledge is critical in making sound decisions and is crucial for organizations' growth and success. As the public service sector is information-based, the data source must possess specific quality characteristics in making sound decisions such as authenticity, accuracy, completeness, and consistency. Information and knowledge sharing for service value co-creation between customers and organizations may solve data source quality issues and improve service value-creation in the public sector (Woratschek et al., 2020; Anuar, 2021). Therefore, citizen KM is imperative to endure relationships, serve each citizen in their preferred way, and achieve citizen satisfaction, trust, and confidence in public sector service organizations.

Customer knowledge can be divided into four types (Davenport et al., 2001; Garcia-Murillo and Annabi, 2002; Gibbert et al., 2002; Desouza and Awazu, 2005; Smith and McKeen, 2005):

- Knowledge *for* customers refers to knowledge directed by the service provider to support customers in their daily transactions.
- Knowledge *from* customers refers to customers' needs or consumption patterns of services that the service provider must incorporate for service innovation and development.
- Knowledge *about* customers encompasses past transactions, present needs and requirements, and future desires.

- Knowledge co-creation *with* customers refers to a two-way client-organization relationship to develop new knowledge or service.

The emergence of process orientation and cross-functional teams in public service sector organizations is a natural byproduct of customer orientation in business organizations. Creating process-centered organizational transformation requires a flexible structure, outsourcing of non-core activities, empowerment of employees, and process-based teamwork. By implementing process re-engineering, public sector organizations could save costs and time and achieve a better distribution of resources while guaranteeing the satisfaction of their clients (Chu et al., 2008; Lopez et al., 2019).

Several scholars have pioneered the works of BPR, such as Hammer (1990), Davenport and Short (1990), Harrington (1991), Hammer and Champy (1993), Davenport (1993), Farmer (1993), Johansson et al. (1993), Klein (1993), Dixon et al. (1994), Hales and Savoie (1994), Manganelli and Klein (1994), Ovans (1995), Peppard and Rowland (1995), and Altinkemer et al. (2011). Many researchers have perceived BPR as re-designing processes, re-tooling ICTs, and re-organizing people to improve key performance areas such as service, quality, cost, and speed (Al-Shammari, 2009; Altinkemer et al., 2011).

3. Method

The study uses an exploratory research design and uses a descriptive research method. The exploratory research design is undertaken to explore something new or clarify ambiguous problems in a specific situation and when a particular issue of interest has not been clearly defined. It also sets the groundwork for further investigation as it is conducted with the expectation that additional research will be needed to provide more conclusive evidence (Zikmund, 2002).

It has systematically analyzed Scopus, Web of Science, and other renowned databases. The analysis involved identifying, screening, and selecting scientific literature and conducting thematic research to develop an initial theoretical framework. The identified papers cover a wide range of interconnected disciplines, including marketing, management, public services, and KM, BPR, and value chain management. A considerable amount of time and effort is spent sorting academic journals by reviewing their titles, abstracts, and manuscripts in traditional and electronic library systems due to a lack of precise keywords that define the subject matter.

4. Results and Discussion

The level of citizen satisfaction with a service depends on the relationship between prior expectations, the quality perceptions after the experience, and the perceptions regarding performance (confirmation or disconfirmation of expectations). Therefore, citizen-client satisfaction with public sector services can

be measured by evaluating the gap between citizens' expectations and experiences (Morgeson, 2014).

4.1. Closing the gap between citizens and public organizations

The knowledge-based SVCC is a holistic model that integrates several interrelated concepts, techniques, and methodologies rooted in people, processes, structure, and technology and aims to create efficient and effective relationships with clients and offer personalized services. The knowledge-enabled SVCC model is proposed to help public sector service organizations close the gap between citizens and public organizations. It provides the best possible experiences for clients whenever and wherever they interact with the firm at different contact points, e.g., call center, the Web, and e-mail. Knowing citizens, creating better relationships, and providing better services are essential to achieving their best experience, loyalty, and satisfaction. For this purpose, developing better knowledge for, from, about, and with citizens is imperative for the SVCC strategy to offer personalized value service and achieve citizen satisfaction, trust, and confidence in public sector service organizations.

4.2. The Knowledge-based citizen-centric SVCC framework

The components of the knowledge-based SVCC framework are divided into three parts as follows in Fig. 1:

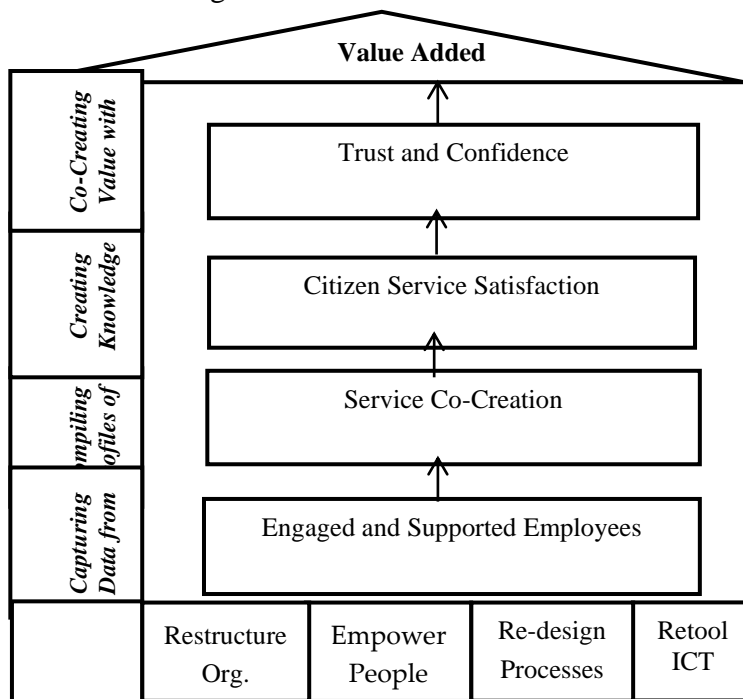


Fig. 1: A schematic of service value chain co-creation strategy

4.2.1. KM processes

This part is concerned with acquiring data, processing data into information, and creating and utilizing knowledge in public service value co-creation to citizens. The following are three hierarchically arranged bases, i.e., data, information, knowledge, and action (Ackoff, 1989):

- Capturing Data *from* Citizens
- Compiling Profiles *of* Citizens
- Creating Knowledge *about* Citizens
- Co-creating Value *with* Citizens

4.2.2. Public value chain

It consists of public sector service primary and support value activities. The primary activities include (Marson and Heintzman, 2010).

- Engaged and Supported Employees
- Internal/External Services
- Citizen Service Satisfaction
- Trust and Confidence

The support activities include (Heintzman and Marson, 2005):

- Strategic planning
- Financial management
- Brand management
- ICT development
- Accounting and management control

4.2.3. Re-inventing organizations

This level involves the reinvention of the significant organizational pillars to enable the SVCC strategy: people, processes, structure, and technology (Hammer, 1990; Hammer and Champy, 2003; Al-Shammari, 2009):

- Re-designing Processes refer to dramatic changes in processes and value-chain activities that seek to enhance organizations' overall performance and efficiency through synergizing work processes scattered across functional units. It streamlines operations and replaces rigid hierarchies with flatter, more cooperative, citizen-centric, and process-oriented structures.
- Re-structuring organizations involve reconfiguring organizational units through initiatives such as downsizing. Organizations should move their front-line citizen-facing units from function to process-based to fit the culture of citizen intimacy. One way is to create a 'networked organization' consisting of teams responsible for a complete business process 'case team.' or a 'one-stop-shop' workstation.

- Empowering Employees relates to the self-directed teams that organizations use to give employees the authority to make decisions independently. Empowerment enables teams to execute the work faster and with fewer delays than un-empowered workers.
- Re-tooling ICT Systems represents changes in the ICT infrastructure, such as the Internet and intranet, to allow public employees to access data, communicate with clients and teams in various locations, collaborate with clients to co-create public service value, and make decisions. ICT systems may include the following:
 - Database systems: refer to OLTP applications that record and process daily transactions.
 - Information-based systems: OLAP systems serve planning and control by providing routine summary and exception reports created from databases.
 - Knowledge-based systems: support both content-based (rule-based) and contact-based (people-based) knowledge created by professional staff.

4.3. Implementation methodology for the SVCC framework

Although there is no specific recommended methodology for the development of a knowledge-based citizen-centric SVCC strategy, the following steps are introduced as a proposed generic road map for implementation:

- Derive desired citizen outcomes from organization strategy: the attributes of services that citizens value most (needs, requirements, and expectations) through knowledge co-creation with citizens, e.g., surveys, interviews, complaints, etc.
- Determine the critical SVCC processes that co-create citizens' value attributes.
- Re-design the critical SVCC processes to be aligned with citizen requirements.
- Make necessary changes in people, structure, culture, and leadership style.
- Choose alternative process designs.
- Leverage ICT systems to achieve outcomes in new ways.

- Implement the new process designs.
 - Piloting stage
 - Phasing-out stage (gradual introduction of new processes)
 - Paralleling (run old and new operations concurrently)
 - Cutting-over (turning off the old and turning on the new)
 - Monitoring performance results

5. Conclusions

Public sector services are critical for the competitive development and growth of a country's economic, social, and industrial systems. The SVCC model adapts the private sector profit chain model that focuses on the client focus in the private sector context. The literature review shows a lack of a comprehensive conceptual framework for SVCC. The study contributes to the existing literature in selecting a context (public sector) that tends to be understudied relative to its importance. The comprehensive nature of the framework is rooted in various works of literature (KM, SVCC, and BPR) that have been integrated into a unified model to tell a coherent story. The critical organizational pillars of people, structure, processes, technology, and data/information have been integrated across SVCC processes to advance the cause of system thinking in providing a sustainable SVCC co-creation strategy. In particular, the original value chain framework proposed by Marson and Heintznab (2010) has been expanded to include 'service co-creation.

The SVCC strategy has been introduced as an integrative framework to leverage public organizations' DCCs and provide the highest value for citizens/clients. The proposed knowledge-based SVCC framework presents a unified frame of reference that integrates dynamic interactions among fundamental organizational pillars of people, processes, structure, and technology to enrich the client knowledge wealth of organizations and offer personalized services. Successful implementation of the SVCC strategy needs amendments to management structures, processes, and ICTs to empower employees and ensure they remain satisfied with their jobs and feel well equipped to respond to client needs.

Public sector service organizations may face challenges when dealing with SVCC as a strategy, not just an ICT project, and aligning it with major organizational components (people, structure, processes, and technology). A successful move to the SVCC strategy requires a fully integrated and automated system that will enable organizations to define, track, and manage their work processes. In this context, process orientation provides public sector organizations with a broad view of the end-to-end chain of linked activities needed to deliver value to citizens in the form of services.

This research could help managers focus on re-designing services and offering customized opportunities to create greater SVCC. The study could assist public service sector managers in developing the training skills required for service

personnel to build effective relationships with citizens, leading to satisfaction, trust, and confidence in public service sector organizations. In particular, public organizations need to decide on the competitive focus of their strategic initiatives, i.e., cost, time, quality, or flexibility, the nature of their product or services, e.g., standardized versus customized or mature versus innovative, and the type of knowledge used, i.e., explicit, or implicit knowledge to solve problems. For instance, public service organizations need to decide when and how to create or exploit people, structure, processes or produce co-created service value that maximizes the efficient utilization of competencies in today's tight financial situations and achieves citizens' satisfaction, trust, and confidence.

However, there is a limit to generalization of the application of the SVCC framework. The proposed framework has not developed nor validated any measurement scales for the model variables. Hence, empirical tests need to be conducted to validate the constructs of the model and their interrelations and credibly apply theory in practice. Future empirical studies need to be executed on additional public sector service dimensions on an ongoing basis. More research would need to be performed on data, information, and knowledge quality in the public sector's SVCC decision-making.

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