WORK SYSTEM METHOD AND ITS APPLICATION TO A UNIVERSITY CONTEXT

PAUL GREEN

ICT and Society Research Group, Durban University of Technology, South Africa

Abstract— Higher education institutions are increasingly placing greater emphasis on meeting students' expectations and needs. However, recently in South Africa there has been a prodigious increase in the number of student protests as a consequence of dissatisfaction. The Work System Method (WSM) provides a rigorous but non-technical approach to visualize and analyse systems related problems and opportunities. Therefore, the purpose of this paper is to demonstrate the unique application of the Work System Method (WSM) in a university context. A qualitative paradigm was adopted using an action research approach. A purposive convenience sampling technique was employed with a total of 30 respondents participating in the research. The insights in the paper might be useful for planning and justifying the use of WSM to a similar context.

Keywords— Work System Method; service systems; university of technology; evaluation; service quality

I. INTRODUCTION

South Africa is currently experiencing nation-wide student protest at institutions of higher learning as a result of the recent #Fees must Fall campaign. Although these protests are largely associated with the higher education funding mechanism in South Africa, delivery of service has also gained sustained interest (Moshikaro & Pencelliah, 2016; Pityana, 2016, Bizana, Naude & Ambe, 2015). A ubiquitous debate in the circles of higher education is whether education is a public good or public service (Stejar, 2011). Notwithstanding these intellectual debates, it is imperative to contextual institutions of higher learning as social constructs and open systems that are intertwined with various stakeholders. In addition, as part of the national plan for higher education, universities are required to contribute more meaningfully to social and economic development.

Education as a service is committed to satisfying the educational needs of its clients by creating education services required by learners and not constraining them to accept existing educational facilities. Diversified educational provision does not guarantee a high quality of education, but different educational services are in a constant state of competition. Conversely, Boyd (2012) asserts that institutions of higher learning need to be careful that as they compete for students, they do not mislead prospective students about the actual life on campus. Vargo and Lusch (2004:2) define services as the application of specialized competencies (knowledge and skills) through deeds, processes, and performances for the benefit of another entity or the entity itself. This implies that almost any purposeful system within a business or governmental entity, including higher education institutions, can be viewed as a service system, as competencies are being applied to something for someone. This paper contributes to academic literature by illustrating the application of the Work System Method to a university as a service system. To the best knowledge of the author there are no previous attempts.

II. WORK SYSTEM METHOD

A relatively recent approach to systems thinking is the Work System Method. According to Alter (2007:34) the work system method (WSM) represents a systems approach as it describes a situation as a system consisting of interacting components that operate together to accomplish a purpose. A university in its entirety is a system consisting of many sub-systems. Alter (2002:91) states that the WSM is a broadly applicable set of ideas that use the concept of "work system" as the crucial point for understanding, analyzing, and improving systems in organizations. The WSM is organized around a typical problem solving process of defining a problem, gathering and analyzing relevant data, identifying alternatives, and selecting a preferred alternative. Alter (2008a:451) states that a work system is a system in which human participants or machines perform work using information, technology, and other resources to produce products and services for internal or external customers. According to Alter (2002:92) the WSM is designed to be quite flexible. It provides usable guidelines and analytic concepts while simultaneously permitting the analysis to occur in whatever order and level of detail is appropriate for the task at hand. One of the advantages of WSM is that it provides steps which can be used to clarify a system-related issue, identify possible directions for change, and produce and justify recommendations. It is against this background that WSM was selected as a methodology in this study.

According to Alter (2008b:72) service systems produce all services of significance and scope, yet the concept of

a service system is not well articulated in the service literature. Alter (2007:34) argues that a service system is a useful fundamental unit for understanding, analyzing, and designing services. Alter (2007:35) proposes a work system framework for service organizations (which is an extension of his original ideas to service organizations) which is applicable to a wide range of services. The Work System Framework provides a rich and broadly applicable model of how services operate and evolve. It creates a platform for comparing service situations, identifying important special cases of services, and describes service-design strategies. In considering a university as a service provider operating in a service system, the challenge is to explore the application of systems thinking and the work system framework in relation to the university as a service organization, and more specifically the WSM extension for service organizations.

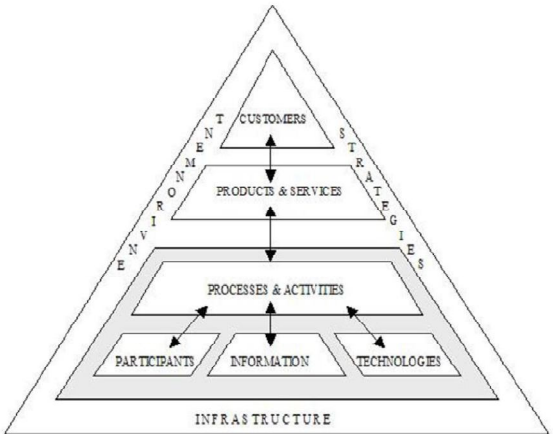


Figure 1: The Work System Framework (adapted from Alter, 2006:13)

The work system framework consists of 9 elements of which 4 are internal and 5 are external elements. The first four elements are the basic components that actually perform the work and these include participants, information, processes & activities and technologies. The five external elements include strategies used by the work system and the organization; infrastructure shared with other work systems; environmental factors that surround the work system; products and services the work system produces and customers for those products and services. The arrows within the framework indicate that the various elements of a work system should be in balance.

The goal of WSM is to assist practitioners of WSM in understanding systems as well as recognizing the completeness of their understanding, regardless of the order they use for thinking about the situation.

III. METHODOLOGY

Using a qualitative methodology an action research approach was employed. A purposive convenience sampling was used whereby a total of 30 participants who were senior members of the university as well as experts in the field of quality assurance. Participants ranged from faculty and support units of the university. Two independent workshops were conducted across two separate campuses of the university each consisting of 15 participants to collect data using focus groups. The approach allowed for uninhibited expression of views and opinions. The aim of the workshops was to gain input into the application of the work system method at the university.

IV. RESULTS

4.1 Elements of a Work System and its applicability to this study

Alter (2006:14) describes customers as people who receive, use or derive direct benefit from products and services that a work system produces. Customers include both internal and external customers. External customers receive and use the economic products and/or services that an organization produces while internal customers are employees or contractors who receive and use a work system's products and/or services while performing work. In this study the customers would include students, staff, parents, donors, government, management and employers.

Products and services are the combination of physical elements, information and services that the work system produces for its various customers (Alter, 2006:14). In the case of a university, the products and services would include tuition, administrative services, and auxiliary services such as counselling, health care, library, financial assistance, accommodation and catering. In addition, there are social products such as student societies, organizations, sport and cultural activities.

Activities and processes entail all the work practices within the work system. Alter (2006:15) suggests that these activities may combine information processing, communication, decision making, coordination, thinking, and physical actions. The major activities and processes undertaken at a university would include teaching and learning which includes lectures, tutorials and assessments. There are also other activities which will be discussed when undertaking a work system snapshot of a university.

The participants are people who perform the work. At a university the work will be performed by two tiers of staff, viz. academic and administrative staff. The academic staff will provide the main activity of

teaching while the administrative staff will render institutional support.

Information includes codified and non-codified information used and created as participants perform their work. Technologies are the tools that help people work more efficiently. At a university the information is vast: from student records to information kept by academic and administrative staff. Technologies would involve computers, software packages, banking facilities, etc.

Alter (2006:15) mentions that environment includes the organizational, cultural, competitive, technical, and regulatory environment within which the work system operates. Factors in the environment will affect system performance even though the system does not rely directly on them in order to operate. A common environmental element in most South African universities over the past decade has been student unrest and political violence. Government regulations would also impact on the work system as institutions of higher learning report to councils which have been put in place by the Higher Education Act. Another important factor worth noting in this study is the merger of two tertiary institutions with diverse backgrounds having different ideologies.

Infrastructure in the work system method would include human, information and technical resources even though these resources are managed outside of the system and shared with other work systems. At a university this would include the lecture venues, libraries, computer laboratories, etc.

According to Alter (2006:16) analysis, as part of the work system method, typically begins with using a simple and widely applicable tool called a work system snapshot. The purpose of the work system snapshot is to clarify the scope of the work system and identify the most important things that it produces for its customers.

Table 1: Work System Snapshot of a learner's service experience at a University

Customers	**Products and Services**
• Students • Staff (Academic & Administration – Inst. Support) • Parents • Government • Management	• Tuition • Administrative Services • Auxiliary services (Counselling, Health Care, Library, Financial Aid, Housing, Cafeteria)
Work Practices (Major Activities or Processes)	
• Initially a potential learner will make application via the Central Applications Office (CAO). • Alternatively learners will arrive at the institution looking for possible spaces at an academic department. • Academic staff will scan an applicant's statement of results to determine if he or she meets the minimum entrance requirements. • If yes, learner can return on date of registration. • If no, learner informed that he or she does not meet the entrance requirements and is informed of alternatives. • Day of registration learner will return with ID, certified statement of results. Parents to sign suretyship/guarantor form and the learner to have the minimum deposit. • Student registers and receives academic timetable and told when to return for orientation and start of lectures. • Major activity is the lectures/facilitation/teaching and learning/assessments. Interaction between Academic Staff and Students • Administrative interaction with: - Departmental secretary - Finance - Library - Security	
Participants	**Information**	**Technologies**
• Students • Staff (Academic & Admin) • Parents/Donors • SRC • Government • Employers	• Matric Certificate • Qualifications from previous tertiary institutions • Financial Information • Identity Documents • Lecture notes/material	• Telephones • Computers • Integrated Tertiary Software (ITS) • Networks • Bank card machines

Due to its flexibility in nature, as a system evolves it enables one to add to the framework. After applying the work system snapshot to the university to ascertain the important things that it produces for its customers, the next step was to consider Steven Alter's Service Value Chain Framework.

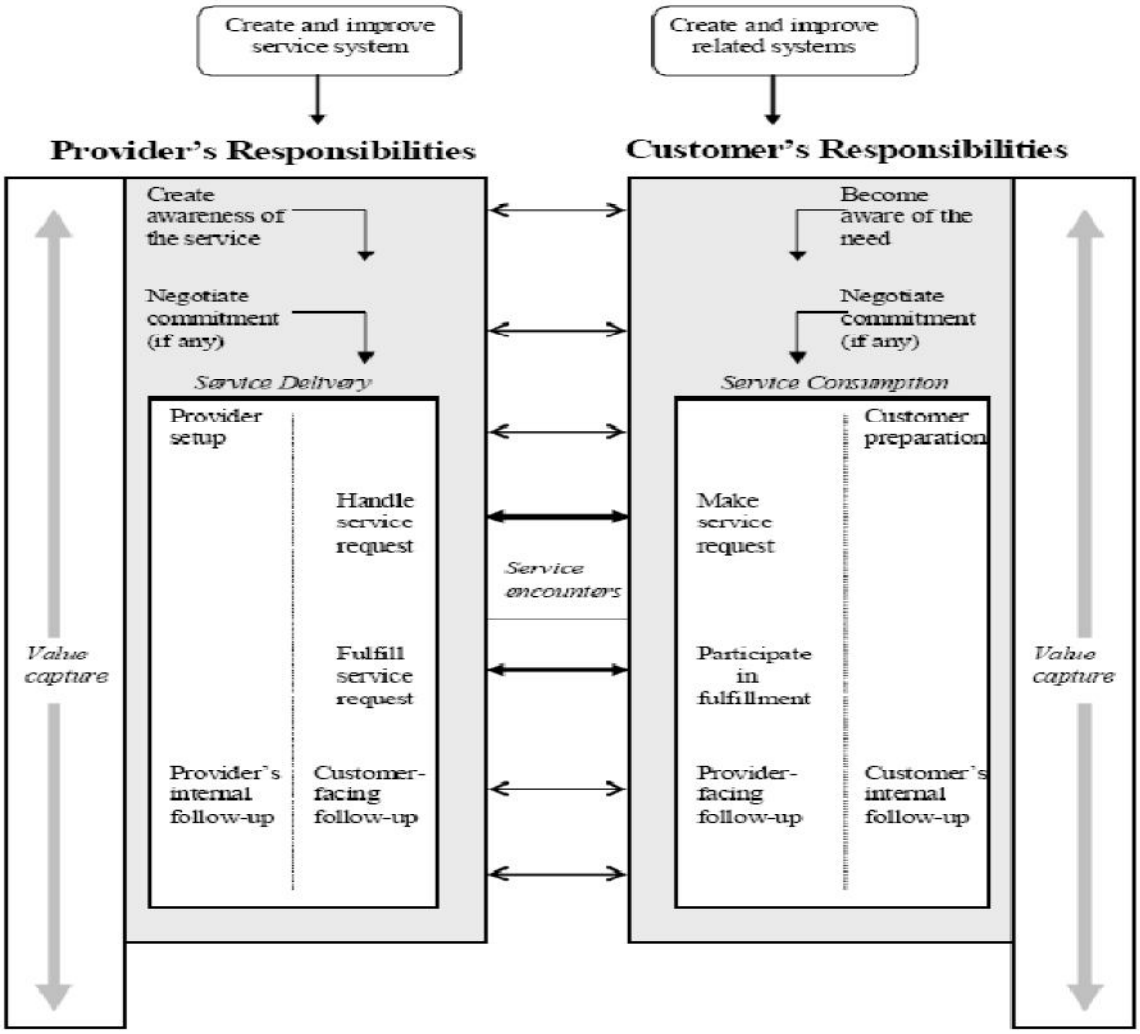


Figure 2: Service value chain framework (adapted from Alter, 2007, 2008)

The above framework was presented to the participants to sensitize them to the responsibilities and expectations of the provider and the customer. It was strongly supported that if consensus is reached on the responsibilities of both parties then dissatisfaction will be minimized.

CONCLUSION

The purpose of this short paper was to demonstrate the application of the Work System Method in a university context. In particular, the Work System Snapshot was applied to gain a deeper understanding of the problem at hand. A limitation of the study is that only university staff were used in the focus groups. Further research will involve the bringing together of both staff and students and implementing the Service Value Chain Framework.

REFERENCES

[1] Alter, S. (2008a) Defining Information Systems as Work Systems: Implications for the IS Field. European Journal of Information Systems, 17(5), pp 448 – 469.

[2] Alter, S. (2008b) Service System Fundamentals: Work System, Value Chain, and Life Cycle, IBM Systems Journal, 47(1) pp 71 – 85.

[3] Alter, S. (2007) Could the Work system Method Embrace Systems Concepts More Fully? Information Resource Management Journal, 20(2), pp 33 – 43.
[4] Alter, S. (2006) The Work System Method: Connecting People, Processes, and IT for Business Results. Larkspur, CA: Work System Press.
[5] Alter, S. (2002) The work system method for understanding information systems and information systems research. Communications of the AIS, 9(6), pp 90 – 104.
[6] Boyd, R. (2012) Customer Service in Higher Education: Finding a Middle Ground. The Mentor: An Advising Journal, June, 1-11. Retrieved from http://www.psu.edu/dus/mentor Accessed on 17 October 2016.
[7] Moshikaro, A., Pencelliah, Y. (2016) Nexus between Political Will and Performance in Local Government. Journal of Public Administration, 51(1), 25-37.
[8] Bizana, N., Naude, M.J., Ambe, I.M. (2015) Supply chain management as a contributing factor to local government service delivery in South Africa. Journal of Contemporary Management, Vol 1, 664-683.
[9] Stejar, C. (2011) Higher Education: Public Good or Public Service? Analysis from the Perspective of Internationalization of Education. Management & Marketing Challenges for the Knowledge Society, Vol 6(1), pp 139 – 150.
[10] Pityana, B. (2016) South Africa 2016 – A Coming of Age: Theological and Ethical Reflections on the Future of South Africa. Strategic Review for Southern Africa, Vol. 38(1), 85-106.
[11] Vargo, S.L. and Lusch, R.F. (2004) Evolving to a new dominant logic for marketing. Journal of Marketing, 68(1), pp 1 – 17.

★★★