MIS Review Vol. 15, No. 2, March (2010), pp.35-54
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Applying a Service Mindset When Thinking and Communicating about Systems and Projects

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ABSTRACT: *Despite the best of intentions, many IT groups have difficulty engaging and communicating with business professionals, managers, and executives they hope to serve. A shift toward applying a deeper service mindset when thinking and communicating about systems and projects might lead to greater success in addressing business issues directly and attaining more effective engagement.*

This paper explains four principles underlying a service mindset for thinking and communicating about systems and projects. These principles lead directly to three frameworks for thinking and communicating about IT-reliant systems. In turn, the frameworks lead to straightforward tools that support business-oriented description and analysis of IT-reliant systems in organizations.

KEYWORDS: *Service Mindset, Work System, Service System, Work System Framework, Service Value Chain Framework, Work System Life Cycle Model.*

1. Introduction

Despite the best of intentions, many IT groups have difficulty engaging and communicating with the business professionals, managers, and executives they hope to serve. At the executive and strategic level, this problem contributes to inadequate business/IT alignment. At the project and operational level, it appears as insufficient user involvement and participation. At either level the impact includes diminished contributions to business success, unnecessarily difficult projects, and frequent disappointments in project results. These problems occur even in IT organizations that have a strong culture of service to the larger organization.

Assume that an IT group's business/IT alignment and user involvement need improvement even though it already has a culture of service. Assume that its staff genuinely wants to provide good service, uses carefully developed processes, has empathy for customers and colleagues, is interested in improving business results, and obtains feedback about service quality using SERVQUAL (Parasuraman et al., 1985) or other tools.

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Even with a current culture of service, a shift toward applying a service mindset when thinking and communicating about systems and projects might lead to greater success in addressing business issues directly and attaining more effective engagement.

This paper explains four principles underlying a service mindset for thinking and communicating about systems and projects. Those principles combine ideas from disciplines including information systems, strategy, marketing, and service operations. The main points have been published, presented in conferences, and used by teams of employed MBA and Executive MBA students analyzing systems in their own organizations. Even if your organization already has a strong orientation toward service, you may find value in considering whether its service mindset might be deepened, and how this might be accomplished using these principles or any other set of principles that would be accepted in your organization.

2. Principles underlying a service mindset related to systems and projects

Four principles are the basis of a service mindset related to systems and projects:

1. Interact with business professionals around business topics that they care about.

2. See "the system" as a work system, not an IT system.

3. Assume that value is co-produced with customers.

4. Think of projects as work system projects, not IT projects.

These principles address many of the issues that limit the extent and effectiveness of user participation, which has been discussed many times in the IS literature. The principles suggested here address all three of the common explanations for "how and why participation leads to system success: the creation of psychological buy-in, the improvement of system quality, and the emergence of relationships among developers and users" (Markus and Mao, 2004). These principles support and augment best practices for building and maintaining technical systems through traditional methods or agile methods. They lead to straightforward tools and analysis methods that supplement standard documentation and analysis approaches used in software development. They are most directly relevant to business applications rather than technical infrastructure that is both mysterious and largely invisible to business personnel.

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2.1 Principle #1: Interact with business professionals around business topics that they care about.

A service mindset for thinking and communicating about systems requires conversations and analytical tools that truly serve business participants.

IT professionals focusing on the current or future use of hardware and software sometimes find it difficult to interact with business professionals around business topics. Business professionals care most about doing their work, serving their customers, producing business results, and achieving personal goals. They are far more able to interact knowledgably around those topics than around the capabilities and features of software and hardware.

Obviously there is no way to avoid discussing details of software and hardware in many situations. The point of the first principle is that the discussion should be approached within the context of the work setting, business goals, and obstacles to business success. The challenge is to bridge the gap from business concerns to the specifics that IT professionals need to pin down in order to do their own work effectively. Each of the other three principles is the basis of a framework and related tools that can be used to bridge this gap.

2.2 Principle #2: See "the system" as a work system, not an IT system.

Business professionals care most about doing their work, serving their customers, producing business results, and achieving personal goals. All of this happens through work systems that are supported by IT.

2.2.1 Definition of work system

A work system is a system in which human participants and/or machines perform work using information, technology, and other resources to produce products and/or services for internal or external customers (Alter, 2006, 2008). Typical business organizations contain work systems that procure materials from suppliers, produce products, deliver products to customers, find customers, create financial reports, hire employees, coordinate work across departments, and perform many other functions. Almost all significant work systems in business and governmental organizations rely on IT in order to operate efficiently and effectively.

Upon being introduced to work system ideas, experienced MBA and Executive MBA students often see that CRM (customer relationship management) projects in their organizations encountered difficulties because the projects were viewed largely as technology projects concerned mostly with configuring and installing vendor software. In contrast, calling those projects work system improvement projects would have emphasized

improving specific work systems, such as how a firm finds sales prospects, how it enters customer orders, and how it provides customer service. A software configuration and installation project ends when software is installed and used (at least to some extent). A work system improvement project ends when the work system's performance improves. The CRM projects whose difficulties were reported by the MBA and Executive MBA students might have been more successful they had been viewed from a work system perspective.

2.2.2 Definition of service

For our purposes, the ongoing debate in academia about the precise definition of service (e.g., Sampson and Froehle, 2006; Spohrer et al., 2007; IfM and IBM, 2008; Rai and Sambamurthy, 2006) or the precise distinction between products and services (e.g., Leavitt, 1960; Vargo and Lusch, 2004) is not a primary issue. We assume that all purposeful systems produce services, defined simply as acts performed for others, including the provision of resources that others will use. With this definition, every purposeful system in an organization can be viewed as a service because it produces something for someone, regardless of whether it is internally directed (e.g., hiring, accounting, planning) or externally directed (sales, delivery, customer service).

For the purpose of analyzing and designing systems in organizations, the distinction between products and services is useful mainly as a reminder that whatever a work system produces often combines product-like and service-like features. The relevant variables and choices for analyzing and designing product/service offerings are basically about positioning along a series of continuous dimensions such as standard vs. customized, produced for a customer vs. co-produced with the customer, tangible vs. intangible, negotiated in advance vs. improvised, largely back stage production effort vs. highly interactive with the customer, and so on.

2.2.3 Work system framework

The nine elements of the work system framework (Figure 1) are the basis for describing and analyzing an IT-reliant work system in an organization. This framework is designed to emphasize business rather than IT concerns. It covers situations that might or might not have a tightly defined business process and might or might not be IT-intensive. Even a rudimentary understanding of a work system requires awareness of each of the nine elements.

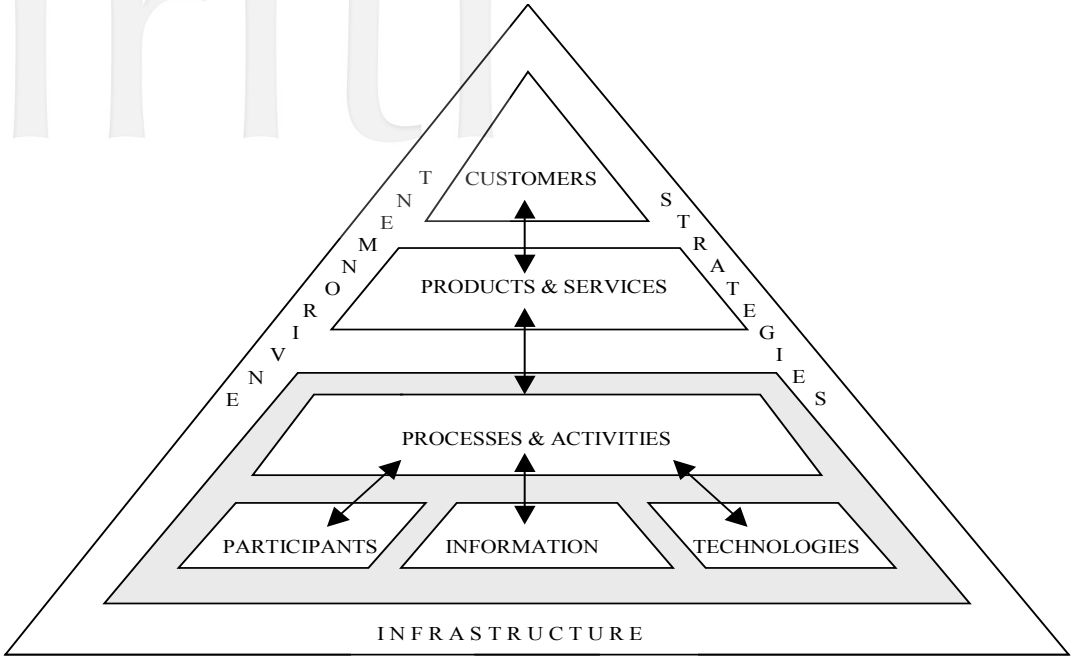

Figure 1 The Work System Framework (Source: Alter [2006])

Placing the customer at the top of the framework is a positive step toward a service mindset for thinking and communicating about systems. Anyone using the work system framework automatically goes through the following thought process:

1. Customers first: The work system exists to produce products and services for customers. Therefore it is insufficient to focus totally on the internal operation of the work system. An understanding or analysis of a work system must include the customer's evaluation of whatever the system produces.

2. Path to customer satisfaction: The arrows in the framework represent the links through which a change in one element might affect another element. Thus, changes in customer needs lead to desired changes in the form, cost, or quality of products and services, which in turn lead to desired changes in the form or performance of processes and activities, and so on. From the other direction, changes in information and technology can always be evaluated based on their impact on both internal efficiency and customer satisfaction.

Placing the work system's customers at the top of the framework and keeping work system customers in view throughout the analysis reflects a deeper service mindset than asking for IT requirements, building IT capabilities that fits those requirements, and assuming that the users of the IT capabilities will be happy. Two years later the IT capabilities may or may not support the work system that would suit customer wants and needs, regardless of whether IT users are happy.

Consistent with its service emphasis, the framework contains slots for customers and participants, but not for users. Customers are the direct beneficiaries of whatever the work system produces. Participants are people who perform the non-automated work in the work system. In many situations, such as self-service work systems that operate through e-commerce web sites, the customer is also a work system participant. The term participants (not users) is included in the work system framework because non-users of IT may play important roles in work systems. The usage of technology may be of secondary importance to key participants in many work systems. Thus, while a typical IT group's focus on users, usage of IT, and user satisfaction is certainly worthwhile, a deeper service mindset would increase the amount of attention focused on all participants and customers.

2.2.4 Work system snapshot

Application of the work system framework to a particular situation can be summarized using a work system snapshot, a one-page summary used to attain agreement about the scope and purpose of the work system that is being analyzed. (See Table 1 for an example.) A work system snapshot uses six central elements of the work system framework to summarize a work system and what it produces. A well-constructed work system snapshot conveys the essence of the work system by identifying the main processes and activities, by being clear about which roles perform each step, by identifying the main informational entities that are used or generated (e.g., orders, invoices, schedules, or bill of materials), and by identifying the main products and services that are produced for customers. Limiting a work system snapshot to a single page avoids excessive detail in the initial stage of the analysis. At this level of summarization, the distinction between technology and technical infrastructure is unimportant.

Work system snapshots are deceptively simple. Many Executive MBA teams have difficulty agreeing on exactly what should and should not be included in a one-page work system snapshot that is produced at the beginning of a work system analysis. If they complain about their difficulty in producing something that seemingly should be easy to produce, it is easy to remind them about the mess that would ensue if they or their organization tried to develop or install software without a negotiated agreement about what work system was to be improved, and what work system improvements were expected. More experienced students often realize quickly that a few hours devoted to attaining agreement about a work system snapshot might have helped their firms avoid significant losses from misdirected projects that never attained their business goals.

Table 1 Example of a Work System Snapshot

Customers	Products & Services
Loan applicant Loan officer Bank's Risk Management Department and top management Federal Deposit Insurance Corporation (FDIC) (a secondary customer)	Loan application Loan write-up Approval or denial of the loan application Explanation of the decision Loan documents
Work Practices (Major Activities or Processes)	
Loan officer identifies businesses that might need a commercial loan. Loan officer and client discuss the client's financing needs and discuss possible terms of the proposed loan. Loan officer helps client compile a loan application including financial history and projections. Loan officer and senior credit officer meet to verify that the loan application has no glaring flaws. Credit analyst prepares a "loan write-up" summarizing the applicant's financial history, providing projections explaining sources of funds for loan payments, and discussing market conditions and applicant's reputation. Each loan is ranked for riskiness based on history and projections. Real estate loans all require an appraisal by a licensed appraiser. (This task is outsourced to an appraisal company.) Loan officer presents the loan write-up to a senior credit officer or loan committee. Senior credit officers approve or deny loans of less than $400,000; a loan committee or executive loan committee approves larger loans. Loan officers may appeal a loan denial or an approval with extremely stringent loan covenants Depending on the size of the loan, the appeal may go to a committee of senior credit officers, or to a loan committee other than the one that made the original decision. Loan officer informs loan applicant of the decision. Loan administration clerk produces loan documents for an approved loan that the client accepts.	
Participants	**Information**	**Technologies**
Loan officer Loan applicant Credit analyst Senior credit officer Loan committee and executive loan committee Loan administration clerk Real estate appraiser	Applicant's financial statements for last three years Applicant's financial and market projections Loan application Loan write-up Explanation of decision Loan documents	Spreadsheet for consolidating information Loan evaluation model MS Word template Internet Telephones

Note: A hypothetical loan application and underwriting system for loans to new clients.
(Source: Alter [2006])

Two basic guidelines for a work system snapshot are: (1) For purposes of the analysis, the work system is the smallest work system that has the problem or opportunity that motivated the analysis. (2) The work system's scope is not determined by the software that is used. This is why a work system should not be called a "Lotus Notes system" or an "SAP system" just because it happens to use a particular brand of software.

2.2.5 Work system snapshots vs. flow charts, use cases, and other system documentation

Work system snapshots differ in important ways from traditional business process tools and documentation methods. Unlike flow charts and UML class diagrams, sequence diagrams, or activity diagrams, work system snapshots are not particularly concerned with precise documentation of detailed logic. Instead, they focus on clarifying the work system's scope by identifying the major processes and activities, participants, information, and so on. Agreement on the work system's scope helps in clarifying the problems and opportunities that are being addressed.

Use of work system snapshots can potentially address the difficulty often encountered when business professionals and IT specialists try to collaborate in projects. Work system snapshots can help them attain a meeting of the minds about the scope of the system that is being created or improved. Staying at an overview level supports that discussion by encouraging focus on big picture issues rather than minor details that often obscure whether everyone agrees on the scope of the effort.

The straightforward format of work system snapshots, and the fact that they can be produced easily using a word processor implies that they can be used in situations where diagramming software or CASE software is not available or is impractical for non-experts to use. Use of work system snapshots in hundreds of MBA and Executive MBA assignments, plus informal reports from MBA students who used work system snapshots in their work settings, indicates that this tool can be used directly by business professionals.

In contrast, UML's technical artifacts and concepts, such as classes, objects, and use cases, make it an impractical tool for direct use by business professionals who lack extensive training. Although UML is a de facto standard in the IT industry, even there UML has proven problematic in many applications (e.g., Erickson and Siau, 2004; Dobing and Parsons, 2006, 2008). Ongoing research has started to examine the relationship between work system snapshots and use cases, starting with the assumption that each of the processes or activities in a work system snapshot might be viewed as a separate use case (Tan et al., 2008). Regardless of how that research turns out, it seems likely that systems analysis tools that are posed in everyday business language such as the terms in the work system framework (Figure 1) have a higher likelihood of successful use by

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business professionals in the context of describing, analyzing, and designing systems that provide services.

2.3 Principle #3: Assume that value is co-produced with customers.

Use of the work system framework is a major step toward a service mindset for thinking and communicating about systems. It is possible to go substantially further by emphasizing the fact that every work system can be viewed as a service system because it produces something for someone. To go beyond the service-related ideas in the work system framework, it is possible to incorporate a set of generic activities and responsibilities of service providers and service customers.

2.3.1 Service value chain framework

Figure 2 shows a service value chain framework that incorporates typical categories of service activities and responsibilities. (This is an updated version of a framework that appeared previously in Alter [2007, 2008].) The bilateral form of the service value chain framework is based on the widely accepted observation that value from services is co-produced by service providers and service consumers.

2.2.3 Co-production of value

Co-production of customer value implies that the customer has responsibilities, and that customer value involves more than just receiving and using whatever the work system happens to produce. For example, the success of medical care in everyday life depends partially on the quality of the doctor's diagnosis and partially on the patient's compliance with whatever the doctor prescribes. Similarly, the success of an outsourced data center depends partly on the outsourcing vendor and partly on the company receiving the outsourcing services.

2.2.4 Other service topics and issues

The service value chain framework represents a number of service topics and issues that should be considered when thinking about any work system as though it were providing services. Starting at the top of Figure 2, part of a service system's success depends on the existence of prerequisite systems, on awareness that the service is being offered, and on the negotiation of governing commitments such as service level agreements. Within specific service instances (lower in Figure 2) it is often useful to consider generic steps such as customer and provider preparation, specification and negotiation of service requests, the process of service fulfillment, and any necessary follow-up. All of the generic steps involve service interactions. Ideally the service design should have the right balance of front-stage and back-stage activities for both the service provider and the customer. It is worthwhile to consider value capture by both the

customer and provider throughout the service value chain. For example, part of the value in some service processes is that the provider and customer have a mutually beneficial service level agreement and do not need to re-negotiate with each instance of providing the service.

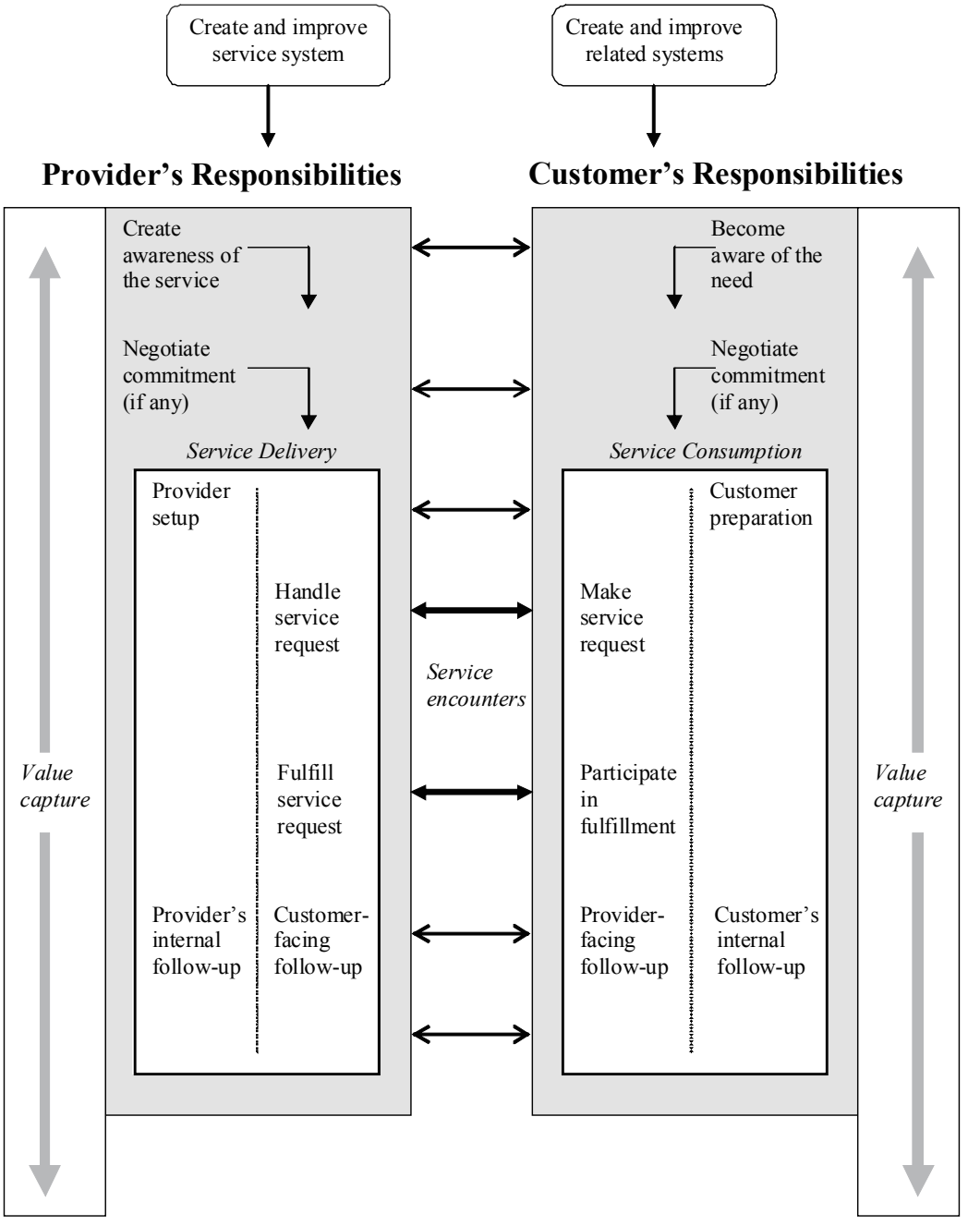

Figure 2 Service Value Chain Framework
(Updated from Alter [2007, 2008])

Adopting a service mindset in thinking and communicating about systems in organizations calls for considering topics such as those represented in Figure 2. Most of those topics are not included in any explicit way in typical systems analysis methods or tools.

2.3.4 Service responsibility tables

Assuming that services are co-produced, the core of a service process can be summarized using a service responsibility table (SRT), a two-column swimlane diagram with one column identifying provider responsibilities, with a second column identifying corresponding customer responsibilities, and with specific provider and customer roles indicated clearly. If there is an intermediary, such as a purchasing agent who links customers and suppliers, it is often useful to include three swimlane columns.

Use of a two-column SRT early in the analysis of a work system that produces services accomplishes several purposes.

1. It clarifies the scope and context of the work system without requiring research about the detailed logic of workflows. For this purpose, it is much simpler to produce and use than a flowchart or other graphical form of representation (which will be needed later in the analysis to clarify detailed logic and other specifics that are not essential for an initial understanding).
2. It focuses attention on activities and responsibilities, rather than on details of technology and information.
3. It identifies the job roles that are involved.
4. It brings customer responsibilities into the analysis.
5. It identifies steps involving provider-customer interactions (rows with both provider and customer responsibilities) and other steps that are not visible to customers.

As the analysis continues, it is easy to add one or two additional columns to an SRT or to use a series of SRTs that address different aspects of the analysis while framing the SRT user's attention around the steps in the first two columns. Table 2 contains a 3-column SRT that identifies problems and issues related to specific steps. Other possibilities for additional columns focus on topics such as preconditions and post-conditions, business rules, important exceptions, common errors, information used, and performance gaps. Many other possibilities are summarized in Alter (2008).

2.3.5 Extending the work system framework's emphasis on the customer

The service value chain framework (Figure 2) and the idea of SRTs (Table 2) were proposed too recently to have completed research demonstrating their impact on systems

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analysis. For now, the main point in both cases is that they extend the work system framework's emphasis on the customer. The work system framework puts the customer at the top and allows the customer to be a participant if appropriate. Going a step further, both the service value chain framework and SRTs are based on co-production of value by providers and customers. They assume that customers participate actively or passively in at least some of the activities in service provision. They also assume that that participation must be included in a thorough description or analysis of a system that provides services.

It is an open question about whether and how customer activities and responsibilities are usually reflected in real world systems analysis efforts that do not have an explicit emphasis on co-production of value. For example, UML use cases are basically about uses of computerized tools, typically from a provider viewpoint rather than from a customer viewpoint, and therefore do not go very far in that direction. Six Sigma tools often refer to the "voice of the customer", but that is usually about understanding customer wishes and needs, rather than assuming that customers play active roles in co-producing value within service systems. Until empirical research results are available it is only possible to say that the service value chain framework and SRTs provide a means for greater emphasis on customer activities and responsibilities that may matter a great deal in service success. For now, the conclusion is that managers and analysts who are concerned about service effectiveness may want to use those ideas to explore co-production issues that might otherwise be ignored.

Table 2 Three-Column Service Responsibility Table (SRT) for the Loan Example in Table 1

Provider Activity or Responsibility	Customer Activity or Responsibility	Problems or Issues
Loan officer identifies businesses that might need a commercial loan.		Loan officers are not finding enough leads.
Loan officer contacts potential loan applicant.	**Potential loan applican**t agrees to discuss the possibility of receiving a loan.	
Loan officer discusses loan applicant's financing needs and possible terms of the proposed loan.	**Potential loan applicant** discusses financing needs.	Loan officer is not able to be specific about loan terms, which are determined during the approval step, which occurs later.

Table 2 Three-Column Service Responsibility Table (SRT) for the Loan Example in Table 1 (Continued)

Loan officer helps loan applicant compile a loan application.	**Loan applicant** compiles loan application.	Loan applicant and loan officer sometimes exaggerate the applicant's financial strength and prospects.
Loan officer and **senior credit officer** meet to verify that the loan application has no glaring flaws.		20% of loans applications have glaring flaws.
Credit analyst prepares a "loan write-up" summarizing the clients' financial history, providing projections of sources of funds for loan payments, etc.		10% rate of significant errors, partly because credit analysts use an error prone combination of several spreadsheets and a word processing program. Much rework due to inexperience of credit analysts.
Loan officer presents the loan write-up to a senior credit officer or loan committee.		Meetings not scheduled in a timely manner. Questions about exaggerated statements by some loan officers.
Senior credit officer or **loan committee** makes approval decision.		Excessive level of non-performing loans. Rationale for approval or refusal not recorded for future analysis.
Loan officer informs loan applicant of the decision.	**Loan applicant** accepts or declines an approved loan.	25% of refused applicants complain reason is unclear. 30% of applicants complain the process takes too long.
Loan administration clerk produces loan documents for an approved loan that the client accepts.		

(Source: S. Alter [2007], 'Service Responsibility Tables: A New Tool for Analyzing and Designing Systems', *Proceedings of AMCIS 2007*, Americas Conference on Information Systems, Keystone, CO. Reprinted in Alter [2008].)

2.4 Principle #4: Think of projects as work system projects rather than IT projects.

From a business viewpoint, projects that attempt to improve the way work is performed should be viewed as work system projects, not IT projects, unless they focus totally on technical infrastructure. Taking a work system approach calls for a life cycle model that describes how work systems evolve.

2.4.1 Work system life cycle model

A work system evolves through iterations of planned and unplanned change. The work system life cycle model (WSLC) in Figure 3 describes how work systems change over time. The planned changes occur through formal projects with initiation, development, and implementation phases. The unplanned changes are ongoing adaptations and experimentation that change aspects of the work system without performing formal projects.

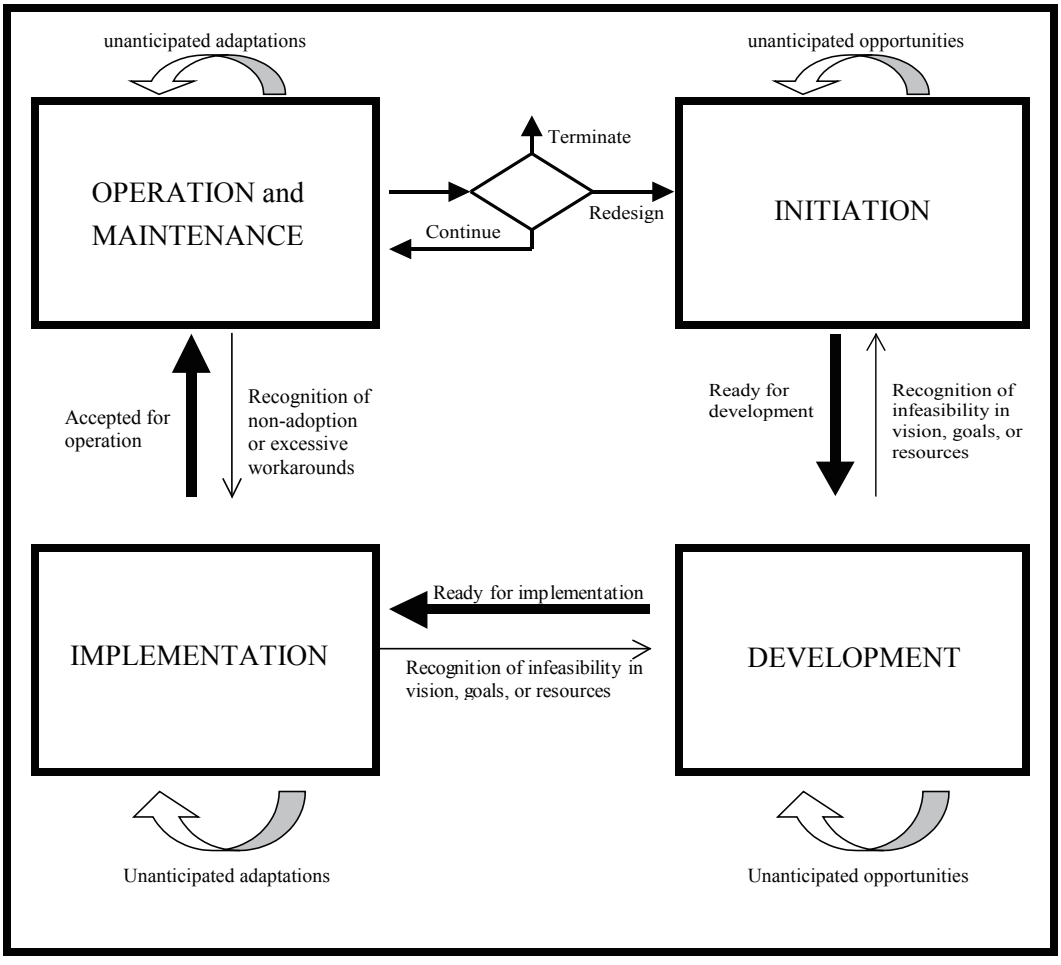

Figure 3 The Work System Life Cycle Model (Source: Alter [2006])

The WSLC is fundamentally different from the frequently cited system development life cycle (SDLC). First, the SDLC is basically a project model rather than a system life cycle. Some current versions of the SDLC contain iterations, but even those are basically iterations within a project. Second, the system in the SDLC is basically a technical artifact that is being programmed. In contrast, the system in the WSLC is a work system that evolves over time through multiple iterations. This evolution occurs through a combination of defined projects and incremental changes resulting from small adaptations and experimentation. In contrast with control-oriented versions of the SDLC, the WSLC treats unplanned changes as part of a work system's natural evolution.

2.4.2 A service mindset for viewing projects

The WSLC reflects a service mindset in several ways. Consistent with principles #1 and #2, it focuses on the work system, rather than the IT system, thereby emphasizing things that business professionals care about, namely, improving the form, function, and performance of one or more work systems, rather than just creating or installing software. Focusing on work systems also maximizes the likelihood that business professionals will be able to comment knowledgably about analysis, design, and implementation issues. Its work system emphasis is also consistent with principle #3 because work system projects necessarily involve co-production of value by business and IT professionals. Work system projects require business/IT coordination because the projects cannot stay on track without attention from business professionals and cannot succeed without technical capabilities provided by IT professionals.

Thinking of a project as a work system project necessarily implies co-production of value by business and IT professionals across all four stages of the WSLC in Figure 3.

2.4.2.1 Operation and maintenance phase

Business professionals manage the work system, including continuous improvement unrelated to IT. Business and IT professionals share the responsibility of monitoring alignment between IT capabilities and work system needs, and coordinating continuous improvement related to IT capabilities. IT professionals maintain hardware and software.

2.4.2.2 Initiation phase

Business professionals define business problems and goals, priorities, constraints, and success criteria. Business and IT professionals outline the general approach for addressing problems and attaining goals. They are also responsible for agreeing on organizational and economic feasibility of the project and for producing the initial project plan for improving the work system. IT professionals identify how IT can contribute and define IT-related goals for the project.

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2.4.2.3 Development phase

Business professionals work with business and IT analysts to specify how the improved work system should operate. Ideally, they should evaluate the usability of hardware and software and should participate in debugging of application features and user interfaces. Business and IT professionals are jointly responsible for determining detailed requirements for the work system and user-visible features of IT capabilities. Ideally, they should agree that hardware and software are ready for implementation in the organization. IT professionals acquire, develop, modify, and debug hardware, software, and documentation.

2.4.2.4 Implementation phase

Business professionals manage implementation in the organization, and monitor both acceptance and resistance. Whether or not they are involved in training on IT details, they should be involved in training on new work practices and in assuring the success of aspects of conversion that are unrelated to IT capabilities. Business and IT professionals have joint responsibility for keeping the implementation on track, deciding whether additional IT modifications are needed, converting to new work practices that involve IT, and verifying that the implementation is successful. IT professionals modify hardware and software as needed for successful implementation.

2.4.3 Comparison with other life cycle models

The work system life cycle model differs from most life cycle models in the IS field because it describes the iterative life cycle of a work system rather than the idealized progression from the beginning to the end of a software project. It also differs from a variety of models related to process and organizational change and reengineering (e.g., Harrington, 1991; Davenport, 1993; Kettinger et al., 1997). The latter models tend to cover many of the same steps as the work system life cycle model, but tend to say less about software development. For example, the steps in Harrington's (1991) model of business process improvement include organize for improvement, understand the process, streamline the process, measurements and controls, and continuous improvement. Davenport's (1993, p. 25) major steps in process innovation include identify processes for innovation, identify change levers, develop process visions, understand existing processes, and design and prototype new processes. The stages in Kettinger et al.'s (1997) business process reengineering framework include envision, initiate, diagnose, redesign, reconstruct, and evaluate. In contrast, the development phase of the work system life cycle model is explicitly devoted to developing whatever resources are required for successful implementation in the organization.

3. Steps toward a deeper service mindset

Adopting a deeper service mindset requires methods and concepts for communicating and thinking effectively about IT-reliant systems in organizations. Principle #1, interact with business professionals around business topics that they care about, leads directly to principle #2, see "the system" as a work system, not and IT system. Incorporating service concepts in more depth calls for principle #3, assume that value is co-produced with customers. In turn, principles #1, #2, and #3 lead to principle #4, thinking of projects as work system projects, not IT projects.

It is possible that use of the three frameworks derived from these principles could help in improving currently disappointing levels of user involvement and business/IT alignment. These frameworks have been tested in classroom settings and have received informal testimonials from employed students (e.g., "I am using it to help in my software sales cycles." or "It helps me explain what I need."). Most recently, advanced MBA students (averaging six years of business experience) at Georgia State University have submitted over 150 analyses and recommendations related to work systems in their own organizations. Although the analysis of those submissions has only begun, the initial summary results demonstrate that business professionals can use the work system framework and work system snapshot effectively for thinking about service systems in their own organizations.

The evaluation of those papers by two reviewers found that most students produced understandable and at least reasonably well argued reports even though they received relatively little documentation of work system concepts and prior work system examples, and even though this assignment was only part of the workload from an evening MBA course for individuals who were already working 40 or more hours per week. Most of the submissions recognized the desirability of starting the analysis without assuming that automation or computerized support of processes should be the goal. Most recognized the necessity of understanding the business situation, describing business issues, and thinking about possibilities for change. In classroom discussions the students unanimously agreed (i.e., there were no dissenting views) that the analysis outline was valuable for promoting organized communication and inquiry about the work system they were analyzing.

There are two possible approaches for using this article's ideas for adopting a deeper service mindset for thinking and communicating about systems. The more conservative 4-step approach starts by assessing the current state of business/IT collaboration (steps #1 and #2 below). The more aggressive approach starts with step #3 below, and moves directly toward initial usage of a work system approach.

3.1 Assess the current state of frameworks, terminology, and methods used when collaborating with business professionals

Many organizations use general-purpose methods such as cost/benefit analysis and SWOT (strengths, weaknesses, opportunities, threats) analysis. Although these are fine in their own terms and should not be abandoned, their core topics are primarily financial and/or competition-related, and may not incorporate a service mindset. If user involvement in IT-related projects is a problem in your organization, it is worthwhile to see whether the frameworks, terminology, and methods used in those projects genuinely support a service mindset. It is also worthwhile to see whether business professionals are familiar enough with business-oriented frameworks, terminology, and methods to be able to use them without direct assistance from business or IT analysts.

3.2 Assess whether frameworks, terminology, and methods may have been a factor in past disappointments

Look at past projects that were supposed to improve work system performance but turned out to be disappointments or disasters. How well did business professionals understand project goals, project scope, and desired changes in work practices before software was acquired or built? Was the project viewed as an IT project rather than a work system project? Did project communications and documentation fully recognize the differences between the work systems that were to be supported and the technical tools that were being built or improved?

3.3 Produce and test a draft of frameworks, terminology, and methods that seem appropriate for your organization

Start small. Identify ideas and terminology that fit with your organization. This article's frameworks and ideas might be a starting point, but some of the terminology might be changed to fit other terminology in your organization. Make sure that common words such as system, user, and implementation do not have multiple, inconsistent meanings. Make sure IT participants in a project are fluent in the new approach and then use it in the early stages of a project aimed at business process improvement.

3.4 Take steps toward institutionalizing your approach

Build on learnings from the initial pilot. Obtain feedback from business and IT participants about aspects of the new approach that were or were not effective. Develop an improved version of your approach and try it in another project. See whether the quality of user involvement improves.

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Steven Alter is a Professor of Information Systems at the University of San Francisco. He received his B.S. and Ph.D. at MIT. His research for the last decade has concerned developing systems analysis concepts and methods that can be used by typical business professionals and can support communication with IT professionals. His 2006 book, The Work System Method: Connecting People, Processes, and IT for Business Results, is a distillation and extension of ideas in 1992, 1996, 1999, and 2002 editions of his information system textbook. His articles have been published in Harvard Business Review, Sloan Management Review, MIS Quarterly, IBM Systems Journal, European Journal of Information Systems, Communications of the Association for Information Systems, Communications of the ACM, and other journals and conference proceedings.