

SERVICE AND TECHNOLOGY

ASSOCIATING CONSUMER PERCEIVED VALUE WITH BUSINESS MODELS FOR DIGITAL SERVICES (NEW)

Aaron Baird, Georgia State University
Raghu Santanam, Arizona State University

As digital services increasingly deal with commodity offerings (i.e., digital content and features that are similar between service providers), service providers are seeking to differentiate themselves with variations in their digital service business models. We seek to demonstrate that consumer value for digital service business models may be quite different even when consumers have similar preferences for standard technology characteristics. In the context of this paper, we specifically consider consumer perceived value associated with Personal Health Records (PHRs) and PHR digital business models, through the use of an integrated latent variable and choice empirical model. We find that although consumer perceived value for PHRs is generally high, when offered a choice between three competing PHR business models, consumers state high value for only two of the business models in the choice set: PHRs offered directly by groups of medical providers and Integrated PHRs. These findings suggest that while perceived value may be high for generally considered digital services, variations in the underlying digital service business models are likely to have significant impacts on consumer valuations of digital services.

Research Category: **Service and Technology**

Baird, A., Raghu T. S., "Associating consumer perceived value with business models for digital services." *European Journal of Information Systems*, *forthcoming*.

(AARON BAIRD, RAGHU SANTANAM)

DETERMINANTS OF MOBILE APPS SUCCESS: EVIDENCE FROM APP STORE MARKET (NEW)

Gun-Woong Lee, Arizona State University
Raghu Santanam, Arizona State University

Mobile applications markets with App stores have introduced a new approach to define and sell software applications with access to a large body of heterogeneous consumer population. This research examines key seller- and App-level characteristics that impact success in an App store market. We tracked individual Apps and their presence in the top grossing 300 charts in Apple App Store and examined how factors at different levels affect the Apps' survival in the top 300 charts. We used a generalized hierarchical modeling approach to measure sales performance, and confirmed the results with the use of a hazard model and a count regression model. We find that broadening App offerings across multiple categories is a key determinant that contributes to a higher probability of survival in the top charts. App-level attributes such as free App offers, high initial ranks, investment in less popular (less competitive) categories, continuous quality updates, and high volume and high user review scores have positive impacts on Apps' sustainability. In general, each diversification decision across a category results in approximately a 15% increase in the presence of an App in the top charts. Survival rates for free Apps are up to two times more than that for paid Apps. Quality (feature) updates to Apps can contribute up to a three-fold improvement in survival rate as well. A key implication of the results is that sellers must utilize the natural segmentation in consumer tastes offered by the different categories to improve sales performance.

Research Category: **Service and Technology**

Lee, G., Raghu, T. S., "Determinants of Mobile Apps Success: Evidence from App Store Market." *Journal of Management Information Systems*, Forthcoming

(GUN-WOONG LEE, RAGHU SANTANAM)

DEVELOPING A FRAMEWORK TO IMPROVE VIRTUAL SHOPPING IN DIGITAL MALLS WITH INTELLIGENT SELF-SERVICE SYSTEMS (NEW)

Haluk Demirkan, University of Washington-Tacoma
James C. Spohrer, IBM

Growing movements to urban places, increasing unemployment, decreasing buying power, rising real estate cost and demanding consumers for convenience and price are creating challenges for retailers. This paper reviews a sample list of retail channels, and proposes a systematic framework for conceptualizing the data-driven, and mobile- and cloud-enabled intelligent self-service systems to improve virtual shopping. With adoption of intelligent self-service systems, - more service oriented, more instrumented (from sensors to smart phones for monitoring consumers' behaviors), interconnected (patterns of interactions), and intelligent (algorithms help recognize patterns) - retail organizations can provide more cost effective quality retail service experiences to consumers.

Research Category: **Service and Technology**

Demirkan, H. and Spohrer, J. C. "Developing a Framework to Improve Virtual Shopping in Digital Malls with Intelligent Self-Service Systems," *Journal of Retailing and Consumer Services*, under review.

(HALUK DEMIRKAN, JAMES SPOHRER)

DO APP DESCRIPTIONS MATTER? EVIDENCE FROM A MOBILE APPS MARKET (NEW)

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Consumers use an array of extrinsic and intrinsic cues to assess the quality/value of Apps in mobile App markets. The extrinsic and intrinsic cues include product descriptions (producer cues) and product page view formatted by the market (market cues). While the cues in product descriptions are voluntarily selected by developers and deliver subjective information on Apps (i.e., low fidelity), those presented through market formats are mandatory and provide objective cues (i.e., high fidelity). We evaluate whether extrinsic and intrinsic cues in App descriptions have significant impacts on the success of App sales and whether they can complement or substitute market cues. Text-mining techniques are utilized to identify commonly used App product description patterns conveying extrinsic and intrinsic cues from 7,376 Apps in the 300 paid Games charts over 20 weeks in the Apple App Store. We empirically classify keyword groups presenting extrinsic ('price promotion', 'sales performance', and 'user review') and intrinsic ('feature update' and 'content') cues. The classification information is utilized in the empirical analysis to assess the impact of cues on App sales. Our results suggest that extrinsic cues ensure better prediction on App sales than intrinsic ones do regardless of information sources, and that market cues are more reliable quality indicators of Apps than producer cues. In addition, we empirically substantiate the complementarities between extrinsic cues in product description and market formats. Overall, the research findings highlight the strategic impacts of product description formulation and have salient implications for theorizing about product description management in the emerging mobile App store markets.

Research Category: **Service and Technology**

Lee, G., Raghu, T. S., "Determinants of Mobile Apps Success: Evidence from App Store Market." *Journal of Management Information Systems*, *Forthcoming*

(GUN-WOONG LEE, RAGHU SANTANAM, SUNGHO PARK)

**ELECTRONIC WORD-OF-MOUTH VERSUS INTERPERSONAL WORD-OF-MOUTH: ARE ALL FORMS OF WORD-OF-MOUTH EQUALLY INFLUENTIAL?
(NEW)**

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Deborah Brown McCabe, Menlo College
James M. Curran, University of South Florida, Sarasota-Manatee

Customers are increasingly using social media channels in their purchase decisions. We explore the influence of interpersonal word-of-mouth (WOM) and various forms of electronic word-of-mouth (eWOM). WOM is found to have more influence on behavioral intentions, trust in WOM, and attitude toward the firm compared to all eWOM channels explored. The influence of various eWOM channels is also compared. Independent sources (i.e., Facebook and yelp.com) are more influential than company-controlled sources of eWOM, such as customer testimonials on a firm website. This pattern is consistent across behavioral intentions, trust in WOM, and attitude toward the firm.

Research Category: **Service and Technology**

Published in *Services Marketing Quarterly*, Volume 34, Issue 3, (2013). Pg. 240-256.

(MATTHEW MEUTER, DEBORAH BROWN MCCABE, JAMES CURRAN)

LEVERAGING THE CAPABILITIES OF SERVICE-ORIENTED DECISION SUPPORT SYSTEMS: PUTTING ANALYTICS AND BIG DATA IN CLOUD (NEW)

Haluk Demirkan, Arizona State University
Dursun Delen, Oklahoma State University

Using service-oriented decision support systems (DSS in Cloud) is one of the major trends for many organizations in hopes of becoming more agile. In this paper, after defining a list of requirements for service-oriented DSS, we propose a conceptual framework for DSS in cloud, and discuss about research directions. A unique contribution of this paper is its perspective on how to servitize the product oriented DSS environment, and demonstrate the opportunities and challenges of engineering service oriented DSS in cloud. When we define data, information and analytics as services, we see that traditional measurement mechanisms, which are mainly time and cost driven, do not work well. Organizations need to consider value of service level and quality in addition to the cost and duration of delivered services. DSS in Cloud enables scale, scope and speed economies. This article contributes new knowledge in service science by tying the information technology strategy perspectives to the database and design science perspectives for a broader audience.

Research Category: **Service and Technology**

Demirkan, H. and Delen, D. (2013) "Leveraging the Capabilities of Service-Oriented Decision Support Systems: Putting Analytics and Big Data in Cloud," *Decision Support Systems and Electronic Commerce*, 55 (1), 412-421.

(HALUK DEMIRKAN, DURSUN DELEN)

SERVICE-ORIENTED METHODOLOGY FOR SYSTEMS DEVELOPMENT (NEW)

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Michael Goul, Arizona State University

Despite advances in software development practices, organizations struggle to implement methodologies that match the risk in a project environment with needed coordination capabilities. Plan-driven and agile software development methodologies each have strengths and risks. However, most project environments cannot be classified as entirely “risky” or “stable,” suggesting the need for hybrid approaches. We leverage a design science approach to implement a novel hybrid methodology based on concepts from the service-oriented paradigm. We motivate the approach using theory on interdependence and coordination, and design the methodology using theory on modularity and service-dominant logic. We also examine the impacts of its adoption at a large electrical power company over a three-year period. The results imply that service-oriented theory should be applied to the human processes involved in systems development in order to achieve better fit between project risk, interdependencies and the selected methodology(ies) in order to improve overall project performance.

Research Category: **Service and Technology**

Keith, M., Demirkan, H. and Goul, M., (2013) “Service-Oriented Methodology for Systems Development,” *Journal of Management Information Systems*, 30 (1), 227–260, Summer, published in the Celebrating 30 Years of the JMIS.

(MARK KEITH, HALUK DEMIRKAN, MICHAEL GOUL)

SMART HEALTHCARE SYSTEMS FRAMEWORK: MORE SERVICE ORIENTED, INSTRUMENTED, INTERCONNECTED AND INTELLIGENT (NEW)

Haluk Demirkan, University of Washington-Tacoma

A sustainable healthcare information system relies on ability to collect, process and transform healthcare data into information, knowledge and action to achieve cost-effective health outcomes on individual and population levels while meeting current consumer demands without reducing its capacity to provide for future. Healthcare providers have many complex and unique challenges. This paper proposes a systematic framework for conceptualizing the data-driven and mobile- and cloud-enabled smart healthcare systems. With adoption of smart healthcare systems, - more service oriented, more instrumented (from sensors to smart phones for monitoring health), interconnected (local and global epidemiological patterns), and intelligent (algorithms help recognize patterns and suggest appropriate responses from lots of data) - healthcare organizations can provide cost effective quality healthcare services with less IT set-up cost and reduced risk.

Research Category: **Service and Technology**

Demirkan, H. (2013) "Smart Healthcare Systems Framework: More Service Oriented, Instrumented, Interconnected and Intelligent," *IEEE IT Professional*, 38-45, September/October.

(HALUK DEMIRKAN)

UNDERSTANDING GENERATION Y AND THEIR USE OF SOCIAL MEDIA: A REVIEW AND RESEARCH AGENDA (NEW)

Ruth N. Bolton, Arizona State University
Parasuraman, University of Miami
Ankie Hoefnagels, Radboud University
Sertan Kabadayi, Fordham University
Thorsten Gruber, University of Manchester
Yuliya Komarova Loureiro, Fordham University
Nanne Migchels, Radboud University
David Solnet, University of Queensland

Generation Y or the Millennial Generation exerts a peculiar fascination on both managers and academics. In what has become common parlance, members of Generation Y are called Digital Natives, rather than Digital Immigrants (Prensky, 2001). They are the first generation to have spent their entire lives in the digital environment; information technology profoundly affects how they live and work (S. Bennett, Maton et al., 2008; Wesner & Miller, 2008). Generation Y actively contributes, shares, searches for and consumes content – plus works and plays – on social media platforms. Service managers and researchers are especially interested in Generation Y's social media usage because it may be a harbinger of how people will behave in the future.

The purpose of this paper is to review what we know – and don't know – about Generation Y's use of social media and to assess the implications for individuals, firms and society. Service organizations, managers, researchers and public policy makers are interested in Generation Y's use of social media because it affects people's behavior in many domains – with positive and negative outcomes for customers, firms and their employees, and society. Generation Y's social media use affects consumers' identity formation, their expectations regarding service, formation of habits, their engagement with brands and firms, participation in value co-creation, brand loyalty, purchase behavior, lifetime value and (ultimately) the value of the firm. It thereby influences organizational decisions about service customization and productivity, such as how resources are allocated between labor and automation. It also profoundly influences the design and implementation of interactive services – including location-based, retail and self-service technology (Berry, Bolton et al., 2010) – as well as customer relationship management practices. Moreover, Generation Y's use of social media has important ramifications for how firms hire and manage employees. Last, social norms and behavior may be changing due to Generation Y's use of social media – affecting civic engagement, attitudes toward privacy, nutrition, health care practices and public safety in the general population.

This paper begins by distinguishing Generation Y from other cohorts in terms of systematic differences in values, preferences and behavior that are stable over time (as opposed to maturational or other differences). Next, we describe Generation Y's social media use. Then, the paper describes how Generation Y's use of social media influences outcomes for individuals, firms and society. It concludes with a discussion of research implications.

Research Category: **Service and Technology**

This research paper appeared in the *Journal of Service Management*, 24 (3), 245 – 267.

(RUTH N. BOLTON, A. PARASURAMAN, ANKIE HOEFNAGELS, SERTAN KABADAYI, THORSTEN GRUBER, YULIYA KOMAROVA LOUREIRO, NANNE MIGCHELS, DAVID SOLNET)

WHEN TRADITIONALLY INSEPARABLE SERVICES ARE SEPARATED BY TECHNOLOGY: THE CASE OF PATIENT PORTAL FEATURES OFFERED BY PRIMARY CARE PROVIDERS (NEW)

Aaron Baird, Georgia State University
Raghu Santanam, Arizona State University
Frederick North, Mayo Clinic
Frederick Edwards, Mayo Clinic

Health-care services have traditionally been provided and consumed simultaneously, as exemplified by in-person patient visits to primary care providers (PCPs), where clinical assessment and treatment are provided and consumed face-to-face. Technological intermediation is changing this traditional assumption, however, as patient-centric technologies, such as patient portals, are creating service separation opportunities. While service separation facilitated by patient portals may bring welcome changes to access, efficiency, and clinical outcomes, usage of patient portals by health-care consumers remains low. This paper contributes to this important policy context by reporting findings from a study designed to assess patient perceptions associated with hypothetical patient portal features offered by PCPs and potential subsequent impacts to PCP loyalty and switching propensity. We find that patient portal features focused on back-office (clinical) self-service capabilities (such viewing health records or summaries from prior visits) are perceived positively by consumers, but, interestingly, clinical digital communication and collaboration features (such as online video consultations with physicians) do not have significant perception impacts. These findings suggest that patient portals may act as a complement to health-care service delivery, while substitution for clinical in-person interactions may not be viewed positively.

Research Category: **Service and Technology**

Baird, A., Raghu T. S., North, F., Edwards, F., “When traditionally inseparable services are separated by technology: the case of patient portal features offered by primary care providers,” *Health Systems, Forthcoming*.

(AARON BAIRD, RAGHU SANTANAM, FREDERICK NORTH, FREDERICK EDWARDS)

A REFERENCE MODEL FOR SUSTAINABLE E-LEARNING SERVICE SYSTEMS: EXPERIENCES WITH THE JOINT UNIVERSITY/TERADATA CONSORTIUM

* Haluk Demirkan, Arizona State University
Michael Goul, Arizona State University
Mary E. Gros, Teradata Corporation

Many e-learning service systems fail. This is particularly true for those sponsored by joint industry/university consortia where substantial economic investments are required up-front. This paper provides an industry/university consortia reference model validated through experiences with the eight year old Teradata University Network. The reference model addresses basic and advanced sustainability capabilities that integrate partner, application, faculty, student and e-learning service system issues. Our validation of the reference model includes a mapping to the literature regarding recent advances in e-learning service system infrastructures and supported capabilities. One outcome of that validation step is a comprehensive set of capability assessment questions to be used by consortia.

Research Category: **Service and Technology**

* Corresponding Author

Demirkan, H., Goul, M. and Gros, M. (2010) "A Reference Model for Sustainable E-Learning Service Systems: Experiences with the Joint University/Teradata Consortium," *Decision Sciences Journal of Innovative Education*, 8 (1), 151-189, January.

(HALUK DEMIRKAN, MICHAEL GOUL, MARY E. GROS)

A SERVICE-ORIENTED WEB APPLICATION FRAMEWORK

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Michael Goul, Arizona State University

The unprecedented convergence in the field of IT - emergent Web applications, Web 3.0, cloud computing, internet-enabled smartphones, RFID, high-performance computing, global high-speed communications, and advanced sensing and data analysis - is creating opportunities and also challenges for organizations. Today, a company's business highly depends on a robust, Web enabled, flexible information and communication infrastructure to foster corporate agility and productivity. This paper proposes a systematic framework for conceptualizing the implementation of a Service-Oriented Web Application Framework that includes inter- and intra- organizational business process, service and resource execution models for development and deployment of emergent Web applications that are easy to use, easy to understand, easily re- deployed, role-based and data centric. By breaking large monolithic solutions into flexible components, enabling out-of-the-box interoperability and process lifecycles, the Service-Oriented Web Application Framework provides opportunities for organizations to develop and deploy platform, technology and location independent, reduced risk and context-rich Web solutions.

Research Category: **Service and Technology**

* Corresponding Author

Demirkan, H., Harmon, R. and Goul, M. (2011) "Service-Oriented Web Application Framework: Utility-grade Instrumentation of Emergent Web Applications," the special issue of the IEEE IT Professional on the Future of Web Applications: Strategies and Design, 15-21, September/October.

(HALUK DEMIRKAN, ROBERT R. HARMON, MICHAEL GOUL)

CONSUMER INFORMATION SYSTEMS AS SERVICES: CASE STUDY OF IPTV SERVICES

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Lesley Gardner, University of Auckland
Martin Bastek, Deloitte

Consumer Information Systems (CIS) are Information System, which provide services primarily to consumers instead of addressing needs of users in traditional organizational settings. Examples of such systems are Internet protocol television (IPTV) services, which are being launch globally at the moment. Design of traditional services typically involves a trade-off between achieving high service productivity and quality. To this end, the use of mass customization has been proposed as a solution. Our paper presents a conceptual framework that can potentially enable designers to achieve such mass customization for consumers information systems. We present that we should consider CIS as services offered to consumers, not only as systems or software, in order to achieve this. We apply the framework to three New Zealand IPTV service offerings and investigate how it applies.

Research Category: **Service and Technology**

(TUURE TUUNANEN, LESLEY GARDNER, MARTIN BASTEK)

ENCOURAGING EXISTING CUSTOMERS TO SWITCH TO SELF-SERVICE TECHNOLOGIES: PUT A LITTLE FUN IN THEIR LIVES

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Matthew L. Meuter, California State University

There is clearly rapid growth of technological applications being used in the customer – firm interactions. In most situations where a technological service delivery option is implemented, existing customer are already using an interpersonal service delivery approach. This research helps us to better understand how consumers can be encouraged to switch from the interpersonal mode to a technologically based service delivery mode.

Here a predictive model based on consumer attitudes and anticipated outcomes (such as utility, enjoyment and social acceptance) is used to predict intentions to switch to a technologically based service delivery approach. The research was conducted within the banking industry. As expected, consumer attitudes toward technology were critical. In addition, it was determined that enjoyment is a stronger predictor of intentions to change than utility, even in the banking context.

Research Category: **Service and Technology**

This research paper appeared in the *Journal of Marketing Theory and Practice*, Fall 2007, 15 (4), pg. 281-296.

(JAMES M. CURRAN, MATTHEW L. MEUTER)

FRONTLINE EMPLOYEE MOTIVATION TO PARTICIPATE IN SERVICE INNOVATION IMPLEMENTATION

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Mary Jo Bitner, Arizona State University
Amy Ostrom, Arizona State University

Front line employees often are in a prime position to accelerate acceptance of a new Self Service Technology (SST) by explaining its benefits and demonstrating its use to customers. Yet, often they are reluctant to do so.

This research examines employee behaviors and motivation regarding recommending a new SST to end customers. More than 300 sales and service employees in dealerships of a major manufacturer were surveyed to assess their motivation for recommending a new consumer SST.

Results of the research suggest that managers can improve employee motivation to participate in service innovation implementation by:

- Creating a sense of the importance of the innovation and building buy-in throughout the organization.
- Providing training for employees about how to use the SST themselves and how to demonstrate and recommend it to customers.
- Establishing organizational processes that allow employees choice and independence regarding the implementation of their job tasks, even while emphasizing the value and importance of their participation.

Research Category: **Service and Technology**

*This research benefited from the support of the Ford Motor Company. An article based on the research is forthcoming in *Journal of the Academy of Marketing Science*, 2010.

(SUSAN CADWALLADER, CHERYL BURKE JARVIS, MARY JO BITNER, AMY OSTROM)

HIGH TECH AND HIGH TOUCH: A FRAMEWORK FOR UNDERSTANDING USER ATTITUDES AND BEHAVIORS RELATED TO SMART INTERACTIVE SERVICES

Nancy Wunderlich, University of Paderborn, Germany
Florian von Wangenheim, Technical University of Munich, Germany
Mary Jo Bitner, Arizona State University

Smart services – services delivered via technology embedded in products, machines, and other physical objects – represent a fast-growing segment of the service innovation marketplace. This paper examines a specific category of smart services which we label “interactive smart services” in which a customer interacts via phone or the Internet with a service provider who is also able to access and control the customer’s equipment. We build a comprehensive framework for understanding user attitudes, acceptance and usage for this category of interactive smart services. The research employs a grounded theory approach and is supported by interviews with smart service users and providers in a B2B context in the United States, Germany and China. This research findings illustrate that the typical focus of service providers on technology features is not enough to increase usage behaviors of smart service customers. Instead, providers should emphasize the interpersonal relationship during the technology-mediated service interaction by providing control cues, raising social presence and trust building mechanisms.

Research Category: **Service and Technology**

This paper is under review at a journal.

(NANCY WÜNDERLICH, FLORIAN VON WANGENHEIM, MARY JO BITNER)

INTERACTIVE SERVICES: A FRAMEWORK, SYNTHESIS AND RESEARCH DIRECTIONS

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Shruti Saxena-Iyer, Arizona State University

This article briefly reviews marketers' current knowledge about interactive services. It defines interactive services as services that have some form of customer–firm interaction in an environment characterized by any level of technology (i.e., a high or low technology environment). Customers may interact with the firm's physical elements (including technology), processes and people in both service creation and delivery.

Consequently, customer participation directly influences service quality and behavioral outcomes (e.g., service usage, repeat purchase behavior and word-of-mouth)—as well as firm outcomes (efficiency, revenues and profits). Hence, a recurring theme throughout our article is that the nature of customer participation is critically important for the effective creation and delivery of interactive services. The article identifies key research areas and their relevance to managerial practice. This analysis yields a set of research questions that provides an agenda for future research.

Research Category: **Service and Technology**

* The paper appeared in *Journal of Interactive Marketing* 2009 (23), pg 91-104.

(RUTH N. BOLTON, SHRUTI SAXENA-IYER)

INTERNET RETAIL OPERATIONS: INTEGRATING THEORY AND PRACTICE FOR MANAGERS

Elliot Rabinovich, Arizona State University
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The rise of the Internet as the first choice for retail shoppers presents new challenges for retailers and suppliers. This book details how information technology evolved to play such a role in retail supply chain networks, how this has impacted supply chain networks, and how this has changed service operations. The first part of the text addresses information technology in relation to service and retail industries. The second part covers how the new supply chain dynamics impacts traditional service and retail delivery, the costs involved, the impacts on customer service, and customer expectations. The third part presents case studies of how different retailers meet challenges.

Research Category: **Service and Technology**

(ELLIOT RABINOVICH, TIMOTHY LASETER)

LEVERAGING THE CAPABILITIES OF SERVICE-ORIENTED DECISION SUPPORT SYSTEMS IN THE CLOUD

* Haluk Demirkan, Arizona State University
Dursun Delen, Oklahoma State University

Using service-oriented decision support systems (DSS in Cloud) is one of the major trends for many organizations in hopes of becoming an agile business. After defining a list of requirements for service-oriented DSS, we propose a conceptual framework for DSS in cloud, and discuss about research directions. A unique contribution of this paper is its perspective on how to servitize the product oriented DSS environment, and demonstrate the opportunities and challenges of engineering DSS in cloud environment. When we define data, information and analytics we see that traditional measurement mechanisms do not work efficiently. Organizations may care about service accuracy and quality in addition the cost and delivery time. Service-oriented DSS (DSS in Cloud) proposes scale, scope and speed economies. This article contributes new knowledge in service science by tying the information technology strategy perspectives to the database and design science perspectives for a broader audience. Usually the more technical perspective is offered on a standalone basis, and confined to the database systems space – even when the discussion is about business processes.

Research Category: **Service and Technology**

* Corresponding Author

Demirkan, H. and Delen, D. “Leveraging The Capabilities Of Service-Oriented Decision Support Systems in the Cloud,” Working paper, Arizona State University, 2011.

(HALUK DEMIRKAN, DURSUN DELEN)

PROCESS COMPLETENESS: STRATEGIES FOR ALIGNING SERVICE SYSTEMS WITH CUSTOMERS' SERVICE NEEDS*

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M. Kathryn Brohman, Queen's University
Richard T. Watson, University of Georgia
A. Parasuraman, University of Miami

The growth of electronic commerce, coupled with the continuing growth of the service sectors of the global economy, has spawned newfound attention to service systems. However, despite growing attention to IT-enabled customer service, most organizations still struggle with designing and implementing process flows to enable their customer service strategy. In this article we introduce the notion of “process completeness,” which is achieved when a firm’s service delivery system matches the typical customer’s breadth of expectations, and discuss a set of process completeness states and strategies in order to provide a vocabulary and a framework for research and practice concerned with the design of optimal workflow for customer service processes. Based on a set of six case studies, our work shows that identifying the optimal process completeness strategy is necessary for organizations in order to avoid either under-completeness, and customer dissatisfaction, or over-completeness, and an unnecessary depletion of limited resources.

Research Category: **Service and Technology**

*The paper appeared in Business Horizons, Vol. 52, No. 4, July-August 2009, 367-376.

(GABRIELE PICCOLI, M. KATHRYN BROHMAN, RICHARD T. WATSON, A. PARASURAMAN)

ROADMAPPING THE NEXT WAVE OF SUSTAINABLE IT

Robert Harmon, Portland State University
* Haluk Demirkan, Arizona State University

This paper explores the strategic dimensions and drivers of sustainable IT and roadmaps its likely development as a disruptive innovative force over the next decade as it moves beyond the datacenter and throughout the IT organization, the firm, markets, and society at large. Its purpose is to provide a comprehensive view of the emerging industry to inform sustainable IT strategy development and stimulate future research.

The paper defines the emerging field of sustainable IT and its green IT and sustainable IT services dimensions. It identifies market segments, products and services, technologies, compliance and reporting requirements, organizational changes, and value migration and roadmaps a likely future landscape for the development of sustainable IT strategy.

Developing a sustainable IT strategy is a major issue for most organizations. Managers and researchers can use the results of this study to better understand the dimensions of sustainable IT and its likely future growth paths. Researchers will find the comprehensive approach to the topic useful for planning future technological innovations and determining their disruptive potential. Managers can use the results to benchmark their current situation and develop strategies for the next generation of sustainable IT service solutions.

Research Category: **Service and Technology**

* Corresponding Author

Harmon, R. and Demirkan, H. (2011) "IT Services Innovation: The Next Wave of Sustainable IT?" by the special issue of IEEE IT Professional on Green IT, 19-25, Jan/Feb.

(ROBERT HARMON, HALUK DEMIRKAN)

SEEDING THE CLOUD BY RE-ALIGNING PEOPLE, PROCESS AND TECHNOLOGY

* Haluk Demirkan, Arizona State University
Michael Goul, Arizona State University
George W. Brown, Value Chain Group, Inc.

To cut costs, mitigate risk and reduce the complexity, many organizations are exploring their IT landscapes with lenses that transcend business process management, organizational structure, services-based sourcing strategies, legacy application integration and virtualized resource management. We refer to this type of integrated exploration as a service-oriented transformation for agility. Today, a central driver for service-oriented transformation is the advent of cloud computing. Preparing an organization for adoption of cloud computing options may require a jolt to current IT practices, and that is the purpose of a Cloud Adoption Readiness Assessment (CARA). CARA is an integrated exploration that provides a path to follow to realize a culture suited for service-based computing – we refer to it as ‘seeding the cloud’ since CARA precedes consideration of entering into cloud computing contracts. In fact, CARA may result in service-oriented transformations that make little use of public cloud computing, major use of private clouds or some hybrid combination. In this article, we explain CARA and discuss results from its evolution and application at Intel Corporation.

For Intel, CARA signified the beginning of a journey. Whether faced with managing a complex federation of high technology supply chain partners, the journey has been grounded through close examination of process and services fusion. Intel’s agility agenda includes tighter integration of IT systems, reducing order-fulfillment lead times and inventory, managing overspends and enabling faster placement of orders, accelerating new product development, and reaching new customers.

Research Category: **Service and Technology**

* Corresponding Author

Demirkan, H., Goul, M. and Brown, G.W., “Seeding the Cloud by Re-Aligning People, Process and Technology,” Working paper, Arizona State University, 2011.

(HALUK DEMIRKAN, MICHAEL GOUL, GEORGE W. BROWN)

SELF SERVICE AND INTER-CUSTOMER INTERACTIONS: BLAME ATTRIBUTION, RESPONSIBILITY ASSIGNMENT, PERCEIVED SERVICE QUALITY AND REPEAT PURCHASING INTENTIONS

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Thomas Choi, Arizona State University
Elliot Rabinovich, Arizona State University
Aaron Crawford, Arizona State University

Inter-customer interactions play a significant role in the management of retail service operations. Our study takes place in a retail self-service setting where the service provider is not directly involved in the service operations (i.e., self-service terminals). Our research shows that fellow customers can exert influence on a focal customer's quality perception and repeat purchasing intentions. When negative inter-customer interaction occurs, how much a focal customer holds the service provider to be accountable leads to reduced service quality perception and reduced repeat purchasing intentions. However, this relationship does not hold when there is a positive inter-customer interaction. When positive inter-customer interaction occurs, how much a focal customer assigns responsibility to the service provider does not translate into enhanced service quality perception or repeat purchasing intention. Such counter-intuitive results give service providers specific strategies on how to actively manage their customers to be efficient technology users and encourage collaboration among customers.

Research Category: **Service and Technology**

(MEI LI, THOMAS CHOI, ELLIOT RABINOVICH, AARON CRAWFORD)

SERVITIZED ENTERPRISES FOR DISTRIBUTED COLLABORATIVE COMMERCE

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Agility and innovation are essential for survival in today's business world. Mergers and acquisitions, new regulations, rapidly changing technology, increasing competition and heightened customer expectations mean companies must become more responsive to changing demands. This move to agility through innovation can be possible with the service oriented solutions offered by Collaborative Servitized Enterprises (CSE). In this article, the authors demonstrate the architecture of a CSE and develop a multidisciplinary research program, incorporating a more science-based approach to the effective, scalable, secure, and knowledge-driven design and development of collaborative servitized enterprises, to address some of today's commoditization lead issues. The authors' primary objective is to lay the foundation of an integrated service culture, which is characterized by a cross-disciplinary attitude that fulfills customers' needs. A secondary attitude within that culture is an awareness of the complexities associated with service tradeoff decision-making, requiring a careful balance of value, risk, cost, and quality of service.

Research Category: **Service and Technology**

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(HALUK DEMIRKAN, JAMES C. SPOHRER)

SUSTAINABLE “DIGITAL UNIVERSE”: HOW SHOULD FIRMS ORGANIZE BUSINESS AND IT STRATEGY FOR A BETTER WORLD?

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Did you know the “internet of things” will expand to encompass around 16 billion devices by 2020? IDC Research indicates that the creation and replication of new digital information set a record in 2009 by growing to 800 billion gigabytes, 62 percent over the previous year; and between 2009 and 2020, the information in the Digital Universe will grow by a factor of 44 to 35 trillion gigabytes, the number of files in it to be managed will grow by a factor of 67, and the storage capacity will grow by a factor of 30. The growth of the digital universe in last five years will have a measurable impact on the environment, in terms of both power consumed and electronic waste. Power consumption that was 1kW per server rack in 2000 is now closer to 10kW. Customers building new datacenters are planning for 20kW per rack. Also, electronic waste is already accumulating at more than 1 billion units a year — mostly computers, laptops, mobile phones, but also personal digital electronics. This will make it clear to business executives and CIOs that much of next 10 years of their careers will be spent dealing with challenge of the mismatch of these growth rates and the sustainability of digital universe.

The emerging emphasis on a broader corporate social responsibility (CSR)-based definition of sustainable IT is likely to leave corporate IT groups ill prepared to deal with the full range of issues that make up the knowledge sphere and practice of CSR. Furthermore, the existing gap between IT groups and customers, both internal and external, and the lack of alignment between IT and business strategy should give one pause as IT tries to navigate the CSR/CS strategic waters without a full appreciation for the social responsibility dimensions and potential impacts on IT.

As the new discipline of sustainable IT grows and assumes, by choice or by mandate, a broader societal mission, there will be increasing pressure for integration with corporate sustainability and social responsibility strategies. The purpose of this paper is to define the CSR dimensions that impact IT, review the current state of sustainable IT, provide a sustainable IT strategy and innovation framework, and review the sustainable IT initiatives of a number of companies (such as Intel, IBM and HP) that are viewed as leaders in CSR as they plan for the future of sustainable IT.

Research Category: **Service and Technology**

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(HALUK DEMIRKAN, ROBERT R. HARMON)

TESTING THE RECRUITMENT OF LEAD USERS FROM VIRTUAL COMMUNITIES TO CO-CREATE INNOVATIVE IT ENABLED SERVICES FOR CONSUMERS

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Contemporary information systems and services must fulfill the needs of a variety of consumers instead of traditional organizational users. New ways to incorporate these consumers as users in development are required. The lead user method used in new product and service development is a promising approach to tackle this problem. However, the finding and recruiting of the lead users has been found very burdensome for the firms. We propose the use of virtual communities for the task. We tested empirically this new way of identifying and contacting the lead users for requirements discovery for an innovative mobile service. The proposed method was compared to a traditional way of recruiting lead users, namely snowballing. Our findings show that the proposed method can be considered to be at least as good method for lead user recruitment as snowballing in terms of perceived quality of the requirements discovered.

Research Category: **Service and Technology**

(TUURE TUUNANEN, JOHANNA BRAGGE, WENDY HUI, VILLE VIRTANEN)

THE INFLUENCE OF C2C COMMUNICATIONS IN ONLINE BRAND COMMUNITIES ON CUSTOMER PURCHASE BEHAVIOR*

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This article reports on a study of consumers' use of online message boards as a means of "customer-to-customer" service in providing product opinions, usage information, and other forms of guidance that influence purchase decisions. Increasingly, consumers use the internet as a form of service technology for pre-purchase information gathering. While technical specifications and potentially biased selling points can be gleaned from corporate web sites, online brand communities are becoming essential conduits for the customer-to-customer (C2C) sharing of product information and experiences. This study uses a *netnography* technique to code and analyze conversations between brand community members of two competitor firms. These data are combined with a survey component and actual purchase data to develop insights into how these communities operate and influence participants in important ways. This study provides several managerial insights, including considering the relative strengths and weaknesses of company-sponsored versus anonymous, and moderated versus open communities as service vehicles for the company.

Research Category: **Service and Technology**

*Forthcoming in 2010, *Journal of the Academy of Marketing Science*.

(CHARLES H. NOBLE, MAVIS ADJEI, STEPHANIE M. NOBLE)

THE TRICK OF THE TAIL: SUPERSTARS, NICHEs AND PRODUCT RETURNS IN INTERNET RETAILING

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Our paper explores and reconciles two seemingly contradictory theories for market growth and appropriate strategic responses in Internet retailing. The popular “Long Tail” view argues that the greater variety offered on the Internet expands the range of products that can be sold profitably by providing better matching between customer desires and available products. The “Superstar” or “Steep Tail” model offers an antithetical view, suggesting that the very best products will increasingly dominate categories due to the growth of “winner-take-all” markets. Our empirical research examines data from over 5,000 SKUs of an Internet retailer of durable consumer goods to understand how product popularity affects return rates and product profitability. While past research on media consumables generally supports the Long Tail view, our data on household durables shows significantly higher return rates in the distribution tail, supporting the Superstar perspective. However, this result is balanced with the finding that product margins are higher for niche products. Overall, these findings suggest the Long Tail view is not unilaterally dominant in online retailing and should be considered in tandem with a Superstar view.

Research Category: **Service and Technology**

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