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Longing for service: Bringing the UCL Conception towards services research

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ABSTRACT

There has been an increase in the relevance of and interest in services and services research. There is a acknowledgement that the emerging field of services science will need to draw on multiple disciplines and practices. There is a growing body of work from Human-Computer Interaction (HCI) researchers and practitioners that consider services, but there has been limited interaction between service researchers and HCI. We argue that HCI can provide two major elements of interest to service science: (1) the user centred mindset and techniques; and (2) concepts and frameworks applicable to understanding the nature of services. This second option is of major concern in this paper, where we consider Long's work (undertaken with John Dowell) on a Conception for HCI. The conception stands as an important antecedent to our own work on a framework that: (a) relates the various strands of servicer research; and (b) can be used to provide high-level integrative models of service systems. Core concepts of the UCL Conception such as domain, task, and structures and behaviours partially help to relate systematically different streams of services research, and provide richer descriptions of them. However, if the UCL Conception is moved towards services additional issues and challenges arise. For example, the kinds of domain changes that are made in services differ; services exist in a wider environment; and that effectiveness judgements are dependent on values. We explore these issues and provide reflections on the status of HCI and Service Science.

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1. Introduction

As well as becoming an ever more important part of local and global economies, services and service design are emerging, crossing, and in some cases redefining disciplinary boundaries. Papers have emerged in HCI venues that have explicitly examined services (e.g. Chen et al., 2009; Cyr et al., 2007; Magoulas and Chen, 2006; van Dijk et al., 2007). Service has emerged as a frequent metaphor for a range of computing applications, web based, pervasive and ubiquitous: here researchers and practitioners often talk of services instead of applications. This is in addition to a service metaphor in Service-Oriented Architectures (Luthria and Rabhi, 2009; Papazoglou and van den Heuvel, 2007), and the Software as a Service concept. The user, value, and worth centred ethos of HCI (e.g. Cockton, 2006; McCarthy and Wright, 2004), is making its way into service design approaches (e.g. Cottam and Leadbeater, 2004; Jones and Samalionis, 2008; Parker and Heapy, 2006; Reason et al., 2009).

Definitions of services stress the intangible, activity, and participatory nature of services (e.g. Hill, 1977; Lovelock, 1983; Lovelock and Gummesson, 2004; Rathmell, 1974; Shostack, 1977; Vargo and Lusch, 2004a). Hill defined services as "some change is brought about in the condition of some person or good, with the agreement

of the person concerned or economic unit owning the good (1977, p. 318)." This definition suggest that services are activities upon objects and artefacts, both natural (people, pets, gardens) and designed (cars, houses, computers) as well as concrete (e.g. bodies, equipment) and abstract (e.g. education, publishing, therapy). Hill is also keen to stress the role of exchange, and to distinguish between activities that can and cannot be solely performed by oneself, noting that "if an individual grows his own vegetables or repairs his own car, he is engaged in the production of goods and services. On the other hand, if he runs a mile to keep fit, he is not engaged because he can neither buy nor sell the fitness he acquires, nor pay someone else to keep fit for him (1977, p. 317)." Hence services are potentially transferable activities performed by self or other to achieve a range of benefits (e.g. save money, sense of accomplishment). Some can be legally enforced onto an economic unit (e.g. tax, insurance, MOT), therefore implying a forced transfer.

Recently, the monikers service science and service systems have emerged from initiatives to support an interdisciplinary dialogue on services (IfM and IBM, 2008). Service systems have been defined as "dynamic configurations of people, technologies, organisations and shared information that create and deliver value to customers, providers and other stakeholders (IfM and IBM, 2008, p. 1)," with service science being "the study of service systems and of the co-creation of value within complex constellations of integrated resources (Vargo et al., 2008, p. 145)." There is much in common, both conceptually



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and empirically between HCI and service science. Including the goal to create robust and repeatable activities/experiences that are objectively and/or experientially successful; continuing issues in the speed of change in the phenomena they are studying; and the theory-practice gap. However, despite potential opportunities and overlaps, this is not a rebranding of HCI by another name.

Hence, as an emerging area, service science could benefit from HCI's experience, specifically: (1) the user centred mindset and techniques; and (2) concepts and frameworks for understanding the nature of services. It is the second area that is the major concern of this paper, although we return to the issue of user centred mindset in the paper's conclusions. HCI has both produced and adopted rich theoretical tooling in its efforts to understand Interaction with and through IT artefacts. Whilst seemingly diverse with ontological and epistemological differences – they share a common concern to represent the structure of individual and collective activities in a manner that informs the design of new IT artefacts and activities. This key role of activity representations in HCI is often background in favour of a view centred on the technology being developed. However, it is the activity and latterly the experience of that activity that are being supported/enabled by technology that is one of HCI's key methodological outputs.

One of this paper's concerns is with the UCL Conception (Dowell and Long, 1989) one of the conceptual frameworks put forwards for HCI. The conception offers a set of abstractions for HCI, and has guided several streams of work within UCL and elsewhere, Diaper noted that it is "*perhaps the most sophisticated framework for the discipline of HCI* (2004, p. 15)", with its emphasis on effectiveness/ performance being a key part of Diaper's reasoning behind this assertion. Several of the concepts from Dowell and Long's work have informed our own framework developed to relate different strands of service research together (Wild et al., 2009a,b) and thus Dowell and Long's work acts as an important antecedent to our work in services.

1.1. Paper overview

With this context in mind, Section 2 is concerned with providing an outline of relevant aspects of services research by covering service definitions. In addition, the section covers our understanding of the UCL Conception (Section 2.2) and examines core concepts from the UCL Conception to different strands of services research (Section 2.2.1). Section 3 first covers the Activity Based Framework for Services (ABFS), our own framework, of which the UCL Conception is an important antecedent. We then consider a number of issues that prevented us from applying Dowell and Long's concepts as-is to represent and relate strands of services research and model service systems. Finally, we provide a number of illustrative examples of the use of the ABFS for modelling service systems (Section 3.2). Section 4 summarises and concludes the paper, discussed whether services are within the remit of HCI; and if so what they may face when interacting with Service Marketing and Service Operations, two areas that have had a focus on services and have varying claims to user representation and/or involvement.

2. Relevant literature

2.1. Services: a necessarily short and biased overview

It is difficult to trace the growth in importance of services because of differences in the ways that they are defined and reported over time and between countries (Hill, 1977, 1999). Economic downturns aside, a figure that is often cited is that services account for 70–80% of Western economic activity (IfM and IBM, 2008; Parker and Heapy, 2006). During recent years, a number of monikers have been put forwards for a shift to service as the focus of economic and intellectual activity.¹ Focus on listing these terms alone will distract the reader and this overview concerns service definitions. The aim is to provide an overview of the different disciplinary perspectives on services.

To even the casual observer the term services embraces a number of different forms and contexts; from intangible services undertaken on abstract objects (such as information and knowledge); via services on people (such as medicine and education); through to maintenance procedures on hardware. In addition, many contexts include all these types of services. Large scale availability contracts for complex products can involve information gathering, forecasting, education and training, the supply of additional tools (e.g. IT artefacts and Support Equipment) in addition to the maintenance of the actual product (Goedkoop et al., 1999; Terry et al., 2007).

Work within Economics and Services Marketing has attempted to provide generic characterisations that show the commonality between these different types of services. The earliest work on service definition was in Economics. Hill (1999) provides a good review of thought on services in Economics, he covers the travails that Economists such as Smith, Say, Senior, Mill, Marshall and Hicks went through in trying to define services. This early work characterised services as different to material goods, and involving different forms of production and delivery. In addition, ownership rights could be established over goods and because of their material nature they can be stored and inventoried, as well as having their life extended through maintenance or remanufacture. In contrast, services were deemed as intangible, variable in quality, and could not be owned or stored. During the 1970s and 1980s, Services Marketing emerged as a discipline in its own right to study flows of services between producers and consumers, working from the view that products and services were different enough to warrant an approach different to mainstream marketing. Two literature reviews (Fisk et al., 1993; Zeithaml et al., 1985) helped to solidify four characteristics as the core distinctions between products and services, namely Intangibility, Heterogeneity, Inseparability, and Perishability (IHIP). Vargo and Lusch summarised these four features as "Intangibility-lacking the palpable or tactile quality of goods. Heterogeneity-the relative inability to standardize the output of services in comparison to goods. Inseparability of production and consumption-the simultaneous nature of service production and consumption compared with the sequential nature of production, purchase, and consumption that characterizes physical products. Perishability—the relative inability to inventory services as compared to goods (Vargo and Lusch, 2004b, p. 326)". Lovelock and Gummesson (2004) characterised the IHIP qualities as forming a 'textbook consensus' on how services Marketing represented itself to its own students, and to other disciplines. The IHIP characteristics partially enabled services marketing to 'break away' from mainstream product-oriented marketing and fuelled a number of research streams, including representation and evaluation of services. Several papers (Lovelock and Gummesson, 2004; Vargo and Lusch, 2004b; Wyckham et al., 1975) question the IHIP characteristics as a foundation for Services Marketing. Some researchers suggest refinements (Hill, 1999; Wild et al., 2007). Others suggest alternative paradigms/logics such as Nonownership (Lovelock and Gummesson, 2004) or the Service-Dominant logic (Vargo and Lusch, 2004a).

We return to the Service-Dominant logic later, but one of the most useful refinements of the core IHIP ideas come from Lovelock (1983) and Hill (1999). Hill (1999) argued for a retention of a dis-

¹ Support Economy; Functional Economy; Servitization; Service systems; Product-Service systems; Software-as-Service; and the Service-Dominant Logic.

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