An Investigation into the Internal Business Logic Required for Successful Strategic Customer Service Initiatives in Organisations Offering Clients an Integrated Package of Products and Services

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Abstract--**Purpose: This paper is directed at gaining an understanding of the internal business logic of an organisation in order to better determine the requirements for a successful customer service initiative in an organisation offering an integrated package of products and services.**

Problem Investigated: Customer service strategies rarely have any meaningful impact within the product development departments of service-oriented organisations. A different approach is therefore required to engender a service culture within product development.

Methodology: A literature study was undertaken to gain an understanding of the concept of Service-Dominant Logic and service-transition strategies (such as servitization); the problem statement was supported and research objectives empirically achieved through a series of open-ended interviews and focus groups (qualitative, narrative-enquiry) following a purposive sampling strategy.

Findings and Conclusion: The results revealed that a service-dominant environment or service culture are not natural phenomena that occur following a customer service initiative. Rather a service culture can be borne from a service-dominant environment when a complex-adaptive systems theory to organisational management is utilised. A positive impact on customer satisfaction was also identified due to the organisational culture at play within the product-development departments.

Value of the Research: The results suggest that product development strategies that address the 'mind of the customer' rather than just the 'voice of the customer' can – through the use of a complex-adaptive systems management theory – engender a service-orientation which will lead to better customer satisfaction and therefore a higher degree of competitiveness for the organisation at large.

I. INTRODUCTION

"*Nothing has a price among men except pleasure… only satisfactions are purchased*"
Ferdinando Galiani (1728-1787) [9]

Excellent customer service or perhaps more descriptively: customer satisfaction; has become a large driver for organisational change in recent times. Consumers are expecting higher levels of customer service from the companies they interact with than ever before. Organisations competing in similar industries, with similar technologies, prices and products use customer service as their differentiator. "*At a minimum, service organisations must meet their customers' expectations merely to be able to stay in the game with their competitors*" [27]. By investing in increasing their customer service levels as a differentiator in their market, organisations thus have the ability to increase their market share and improve customer loyalty and longevity.

It is not easy, however, to simply adopt a customer service strategy and expect business to improve. Kotter [14] explains why organisational transformation often fails: "*change sticks when it becomes 'the way we do things around here', when it seeps into the bloodstream of the corporate body. Until new behaviours are rooted in social norms and shared values, they are subject to degradation as soon as the pressure for change is removed*". Gillespie, Denison, Haaland, Smerek, and Neale [13] conducted a quantitative study on 180 business-units spanning two industries – home-building and car dealerships – on the link between organisational culture and customer satisfaction. They test "*the impact that four characteristics of organisational culture have on customer satisfaction*" [13], those being 'involvement', 'consistency', 'adaptability' and 'mission'. They conclude that their *"findings suggest that the culture of an organisation relates substantially to the satisfaction of its customers. By extension, diagnosing and changing an organisation's culture may thus be a viable way to improve customer satisfaction*".

Traditionally, product development divisions are not concerned with customer service in its entirety. Their idea of customer service is in building a quality product that is maintainable and reliable. From a customer satisfaction point of view, however, a quality product in a product-service system does not mean much if the overall quality, maintainability and supportability of the **service system** is low. Cronin, Brady and Hult [8] support this statement with their empirical assessments of service encounters that measured the effects of quality, value and customer satisfaction on consumer behaviours in service environments. They concluded: "*not only does quality affect perceptions of value and satisfaction, it also influences behavioural intentions directly*" [8].

Ostrom, Bitner, Brown, Burkhard, Goul, Smith-Daniels, Demirkan and Rabinovich [21] state that "*one would be hard pressed to cite published empirical studies that establish the linkage between **service** culture and either customer satisfaction or financial success*". This study will attempt exactly that, while also answering Gillespie et al.'s [13] call for a qualitative study into the impact of organisational culture on customer satisfaction.

This research therefore aims to (qualitatively) discover the ideal business logic required to align both product and service divisions of a product-service system offering towards the same strategic objectives in terms of customer service. The

business logic can either be goods-based or service-based – a concept first published by Vargo and Lusch [33] which has since appeared in numerous publications (Pawar, Beltagui & Riedel in [29]) – and is used to describe the interfaces, processes and relationships that exist between business units.

A. Problem Statement

In the context of the current South African economic climate and building on the work of Ostrom et al. [21] and Gillespie et al. [13], the following problem is noted: service-oriented organisations embarking on customer service 'drives' (rather than strategic initiatives) do not adequately entertain a service climate (let alone a service culture) within the organisation, as the drive rarely penetrates into the product development area of the organisation.

A service organisation offering an integrated package of products and services was selected for this study. The organisation had recently embarked on a customer service initiative and was involved in active product development of multiple consumer electronic devices (products), and in the course of this study released its latest flagship product to the market. This study centres on the software design, development, integration and testing of that product. [1]

The organisation is based in South Africa and serves most of Africa; it has, in the last decade, had embarked upon a strategy of greater control and specification of the consumer electronic devices used to access the service to ensure their customers experience the best possible service. The product development division of this organisation is tasked with designing and developing these consumer electronic devices – this includes hardware specification, functional specification, user interface specification and development along with the system integration and device testing.

B. Research Objectives

The primary research objective of the study was to acquire a clear understanding of undertaking a strategic customer service initiative as it relates product development. The following secondary objectives were identified:

- Assess the intra-business interaction logic prior to and following a customer service initiative; and if different how the change occurred.
- Investigate the impact of the customer service initiative on a product development division in an organisation offering PSSs, specifically in terms of:
  - the day-to-day operations and business processes;
  - the organisational culture within the division; and
  - the skills available and required within the division.
- Determine what constitutes a services oriented culture and explore how such a culture can be nurtured within an institution.

[1] The software developed is a custom application that runs on an embedded Linux base; it is predominantly MIDP2.0-compatible embedded Java (although not Android).

II. SERVICE SCIENCE, SERVICE ORGANISATIONS AND SERVICE-DOMINANT LOGIC

Service-Dominant Logic began as a marketing theory purported by Vargo and Lusch in 2004 but has rapidly become the foundation to the field of study called "service science" [10]. The overall objective of service science, according to Fitzsimmons and Fitzsimmons [10] is to make "work-sharing" and "risk-sharing" relationships more predictable in terms of productivity, performance, quality, compliance, growth and knowledge transfer. This resonates with Kao, Snowden and Boone, and Santos (in [18]) who argue that service systems are complex systems and thus the management of the system must remain flexible enough to adapt and embrace change as service system outcomes are emergent. Schneider and Bowen [27] term the management of a service enterprise 'coordination' and divide the service organisation into three tiers: the coordination tier, the boundary tier and the customer tier. In a review of Schneider and Bowen's [28] contribution to the Handbook of Service Science, Lin [15] explains the importance of the coordination tier (as opposed to terming it a 'management tier') and refers to its specific definition as:

> *"The word, coordination, is used instead of management, to show that you cannot "manage" a service experience once it unfolds. Unlike a manufacturing environment, where the production process can be stopped to make corrections, a service experience unfolds as a whole without intervention in service delivery."*

A. The ten foundational premises of SDL

Vargo and Lusch [33] offer their eight foundational premises of SDL in their 2004 article "*Evolving to a New Dominant Logic for Marketing*". These are expanded to nine in 2006, then later refined and expanded to ten foundational premises. The ninth premise was split in two for greater clarity in their 2008 article "*Service-Dominant Logic: Continuing the Evolution*" [34]. These foundational premises are briefly alluded to in greater detail in the ensuing discussion.

FP1 - Service is the Fundamental Basis of Exchange: Through specialisation, man has evolved from an independent being to one that in interdependent on others for survival. That is, no longer does each man subsist for himself, but rather specialises in a certain area; he then can exchange his skill and services for others. Spohrer and Maglio [30] present the example of a fisherman and farmer. When vegetables are exchanged for fish, the true exchange is of farming knowledge for fishing knowledge. Quite simply, the value of a fish or vegetable cannot be estimated without first understanding the knowledge and skill required to appropriate said vegetable or fish.

FP2 - Indirect Exchange Masks the Fundamental Basis of Exchange: Vargo and Lusch [33] view the monetization

of exchange as indirect exchange. When the barter system was in place, services were exchanged for services – but increasingly services are exchanged for money (purchasing), and that money is obtained by performing some service (a job) [30] [33]. Spohrer and Maglio [30] admit that indirect exchange is often more efficient, but that shared knowledge and mutual adaptation are lost in this exchange that could allow for a greater perceived value, thus greater satisfaction, in the exchange.

FP3 - Goods are a Distribution Mechanism for Service Provision: Vargo and Lusch [33] conclude that "*knowledge and skills can be transferred (1) directly, (2) through education or training, or (3) indirectly by embedding them in objects*". Spohrer and Maglio [30] reference this foundational premise against the previous premise: that the indirect exchange of goods is often more efficient in that not all parties involved in the exchange of the underlying service have to be present at the exchange.

FP4 - Operant Resources are the Fundamental Source of Competitive Advantage: Operant resources, such as skills, knowledge and service-system networks, provide a firm with an ability to cause some desired change, which drives competition [30] [33] [34]. Operand resources or goods cannot be a source of competitive advantage as they can be easily transferred or copied [30], while operant resources are much more complex and difficult to imitate or substitute [4]. Beitelspacher, Tokman, Adams and Glenn Richey [4] conducted an empirical, quantitative study on the relationship between operant resources and market performance in 600 firms in the retail sector. They concluded that "*dynamic intangible resources are at the heart of creating value for the customers and achieving superior retailer performance*" [4].

FP5 - All Economies are Service Economies: Vargo and Lusch [33] quite significantly argue that all economies have and always will be service economies, but that economists have been taught to think it terms of "economies" and "eras" (agricultural, industrial) and so define foundational premise 5 to represent a new era as services are "*becoming more apparent in the economy as specialisation increases and as less of what is exchanged fits the dominant manufactured-output classification system of economic activity*" [30] [33].

FP6 - The Customer is always a Co-Creator of Value: Vargo and Lusch [33] argue that, even for tangible manufactured goods, the value production process does not cease with the manufacturing process, but rather those tangible goods will be utilised by the customer in some value creation process. As Theodore Levitt, Harvard Business School marketing professor (quoted in [7]), says: "*People don't want to buy a quarter-inch drill. They want a quarter-inch hole!*" – the only way to achieve the hole is for the customer to co-create the hole. The simplest interpretation of this is then that a firm cannot create value without input from the customer, or, as Smith et al. [29] describe: "*both the firm and the customer are accountable in achieving value…*"

FP7 - The Enterprise cannot deliver value, but only offer Value Propositions: Gummesson (in [33]) states that "*value creation is only possible when a good or service is consumed. An unsold good has no value, and a service provider without customers cannot produce anything*". If a tangible good is part of the exchange, it has embedded in it the knowledge and skill of its creation that has the potential to create value with the customer, but it is not inherently imbued with value.

FP8 - A Service-Centered View is inherently Customer Oriented and Relational: As explained by Spohrer and Maglio [30], a lower quality relationship with less customer knowledge will often result in inferior value propositions. As value is co-created there *must* be a relational aspect. Vargo and Lusch [34] argue that the existence of the term "customer oriented" is "*evidence of the inadequacy of* [goods-dominant] *logic*" – that the term is required to correct a "*fundamental flaw*" in exchange.

FP9 - All Social and Economic Actors are Resource Integrators: Vargo and Lusch [34] express their discomfort with using the term 'actors' to describe resource integrators in the exchange (value creation process) in their 2008 article. Rather the term 'actors' refers to the service system of individuals and organisations.

FP10 - Value is always Uniquely and Phenomenologically determined by the Beneficiary: The value associated in an exchange is not a decision; it is needs to be understood in context from the recipient's point of view [30]. Customers will evaluate the value proposition uniquely according to what they know, what they need and what they want from the exchange.

B. Product-Service Systems

This study is centred on the concept of a Product-Service System (PSS) – "*an integrated product and service offering that delivers value in use*" [18]. Baines, Lightfoot, Evans, Neely, Greenough, Peppard, Roy, Shehab, Braganza, Tiwari, Alcock, Angus, Bastl, Cousens, Irving, Johnson, Kingston, Lockett, Martinez, Michele, Tranfield, Walton and Wilson [3] performed an analysis of publications concerning PSS and identified the first dedicated publication on the concept to Goedkoop, van Haler, te Riele and Rommers in 1999. Since their original definition, however, the concept has transformed from an active system that "*continuously strives to be competitive*" and "*satisfy customer needs*" [3] to the contemporary view of it being a passive system that is the result of some business or manufacturing process [3] [18].

C. The PS-Continuum and Servitization

Product-Service Systems then exist along the length of a hypothetical line drawn from a pure product to a pure service offering. Smith et al. [29] term this the "*P-S transition*" and the act of moving along this line towards a pure service offering from a product offering is called 'servitization' – a term first coined by Vandermerwe and Rada [32] and defined quite concisely by Baines, Lightfoot, Benedettini and Kay [2]

as: "*the process of creating value by adding services to products*".

In manufacturing, product or goods transactions, value is determined by the producer as their cost of creating plus some additional mark-up. In service transactions, however, the value is *co-created* by both the producer and consumer – and neither can achieve the service outcome without the other – in line with the 6th foundational premise of SDL. Spohrer and Maglio [30] go so far as to define service ***as*** value co-creation in their definition of the concept "service". Desmet, Van Dierdonck and Van Looy (in [36]) outline the need for a "*fundamental mindset change*" for management as they attempt to adapt to the dual role of the client being both consumer and co-producer of value in adopting a servitization strategy. Indeed, Baines et al. (in [36]) asserts that "*servitization brings with it significant cultural challenges*" – a statement echoed by Salonen [26] in an identification of the organisational challenges faced in the adoption of a service transition strategy.

D. Service Culture

It is often stated that the sustainable competitive advantage of "*service role models*", operating in the pure service offering space, such as Disney, Four Seasons, and Singapore Airlines is due to their service culture [21]. This culture is the result of the shared beliefs and values that the employees of a company maintain; it is a system of shared meaning that differentiates the organization from others [21] [25] [36]. The shared beliefs and values instil in the employees a sense of "*how things should be and how things are*", and provide "*core assumptions about why things unfold the way they do*" [21].

Weeks [35] identifies two contrasting ideas surrounding organisational culture; namely the traditional Cartesian-Newtonian (traditional) view, and a Complex Adaptive Systems (CAS) view. The traditional view holds that although difficult, it is possible to actively and intentionally manage the organisational culture to achieve some desired culture [35]. Trompenaars and Prud'Homme argue (in [35]) that this traditional view is favoured by traditional managers who have, as a consequence "*spent significant financial resources on consultants*" to assist in the management of their culture. By contrast the CAS view presents organisational culture as an emergent behaviour. Bennet and Bennet (in [35]) support this as they assert that "*culture emerges out of the nonlinear interactions that take place among individuals and cannot be traced back to a single cause or individual*". To manage organisational culture from a CAS perspective would then require management to identify emergent patterns that would be favourable in eliciting the desired culture and stabilise them, while actively disrupting any patterns hindering the process [35]. This CAS view to service management supports the earlier definition of the 'coordination tier' of a service organisation [12] [15] [27].

E. Service Strategy

In a bid to identify some metrics around service, product, servitization and product-service system strategy, the author conducted some 'Google scholar' searches for articles and books published since the year 2000, these are reflected in Table 1 below.

TABLE 1: STRATEGY SEARCH METRICS

Search Term	Result Count
+"product" +"strategy"	1080000
+"product" -"strategy"	1630000
+"service" +"strategy"	1520000
+"service" -"strategy"	1440000
+"servitization" +"strategy"	573
+"servitization" -"strategy"	159
+"product service system" +"strategy"	1180
+"product service system" -"strategy"	618

Source: Own research

From Table 1 one can see that: 40% of all "*product*" search matches discuss strategy in some form; 51% of all "*service*" search matches discuss strategy, while, in comparison 78% of all "*servitization*" and 66% of all "*product service system*" search matches discuss strategy. This correlation in the literature would seem to suggest that strategy is a very important concept in servitization and product service system initiatives. Tukker and van Halen [31] seem to agree with this, encouraging input and advice from strategy developers when looking to identify new opportunities to 'innovate' in terms of creating product-service systems. Bowen, Siehl and Schneider (in [11]) argue that a greater service orientation in the business strategy is positively associated with instilling a service climate and culture.

Olivia and Kallenberg [19] and Gebauer [11] stress that for a manufacturing enterprise to adopt a service strategy to offer value propositions on the upper end of the P-S continuum, quite a significant investment is required with little hope of realising the benefits immediately. Brax [6] performed a case study on a company that had adopted a service approach in order to remain competitive and identified the many challenges faced by traditional manufacturing firms when adopting a service strategy (aside from the high cost of adopting the strategy). These challenges are:

Marketing Challenge: For a customer to co-create value he needs to understand his role in the process explicitly.

Production Challenge: The production challenge centres on the fact that production and the customer were far removed in the manufacturing enterprise, but through the transition to service provider, the production department needs to better understand the customer – a task they would not ordinarily be suited to.

Delivery Challenge: The delivery challenge is more of a human resources challenge in that employees not suited to, or untrained in, offering services would deliver and configure the product with the customers.

Product-design Challenge: Brax [6] explains the product-design challenge as being one of non-communication. Where in the manufacturing environment, each department had specific goals; each department now has the shared goal of designing a service to suit any customer. This requires a great amount of collaboration between design, marketing and production.

Communication Challenge: Firms must be vigilant to not ignore or undervalue official feedback and reporting mechanisms between the customer and the firm [6]. Official reporting allows for more extensive knowledge sharing and better service within an organisation.

Relationship Challenge: The relationship challenge is possibly the easiest to get right, but also the easiest to get wrong. It is imperative that the relationship between the customer and the firm is actively managed – especially in business-to-business environments. Brax's [6] case study cites examples where engineers and technicians sent to the customer organisation were viewed as "*unprofessional*", or that the firm's maintenance department viewed the customer organisation as "*opportunistic*" and overworking their (the firm's supplied) equipment.

The challenges outlined by Brax [6] above are not specific to a servitization strategy, but to any form of service strategy. Brax [6] concludes that in order to transition to a service focused organisation, the firm cannot simply add services "*on top of*" the original offerings, but that a "*more radical approach is necessary to question the implicit view of the world in which the company operates*". This questioning of the implicit world-view of the firm harks back to previous discussions concerning the organisational culture requirements for servitization.

III. RESEARCH DESIGN AND METHODOLOGY

The nature of open-ended narrative enquiry allows an interviewer to pose questions in context based on responses from the interviewee and allows the interviewer to assess the underlying beliefs of the interviewee [5]. Through a narrative enquiry the everyday experiences of the members of an organisation are translated into stories; events form chains of cause and effect that to the narrator seem logical, but to the observer can only be understood in the greater context of understanding the organisational culture [16] [20]. In collecting an array of stories and analysing the cause and effect traits of them, the researcher is able to 'reverse engineer' the stories to bring the organisational culture to the surface

The author adopted a combined approach of semi-structured interviews and externally mediated focus groups so as not to place bias on the path of discussion. The focus groups consisted of 20 key staff with representatives from each of the departments involved in product development. The aim was to outline their current roles and responsibilities, and their expectations of their customers/suppliers in the value chain. Two more focus group sessions were mediated to address issues identified in the first in an abductive approach. The research methodology adopted in this study falls in line with contemporary research and closely resembles Brax's [6] methodology, while drawing on Salonen [26] and Ng and Nudurupati's [17] abductive method. The result of this is a phenomenological study of the organisational culture with a view as to how that impacts the product development life-cycle, and end-user customer satisfaction.

The interviews were conducted with senior management and senior technical leads – cited in this paper are responses from a general manager, a development manager and the technical manager. These interviewees were also present during the initial focus group.

IV. RESULTS

To unpack the results of the study, the secondary research objectives outlined in section I.B are addressed systematically – the combination of these objectives culminating in the achievement of the primary research objective addressed in this article's conclusion.

A. The Prevailing Business Logic prior to the Customer Service Initiative

From a high-level, the classical activities and roles identified are summarised in Figure 1. The component vendors each have their own development life cycle, which is simplified in Figure 2. These classical roles follow the management structure of the organisation under study. The interactions and expectations of each department when in this format are predominantly goods-based, as can be seen when the interactions are analysed in the context of Vargo and Lusch's [33] "*Goods Dominant Logic vs. Service Dominant Logic*" comparison.

- The primary unit of exchange is measurement/documentation: a test-report, release-note or an expected bill-of-materials.
- The number of test failures determines the 'value' of the product or component.
- The role of goods: artefacts and documentation are enacted upon to achieve the goals.
- The role of the customer: the customer consumes the artefact & documentation. One respondent in the focus group made quite a poignant comment in describing the interaction between himself as supplier and his business-customers as "*we just used to throw it over the wall to them*".
- Department-Customer interaction: as in the role of the customer above, the interaction is strained, and purely economic.
- Source of economic wealth: the success of a department was measured by the rate of incident generation/resolution/analysis – the wealth of that department is therefore the surplus time and resources available to generate/resolve/analyse incidents.

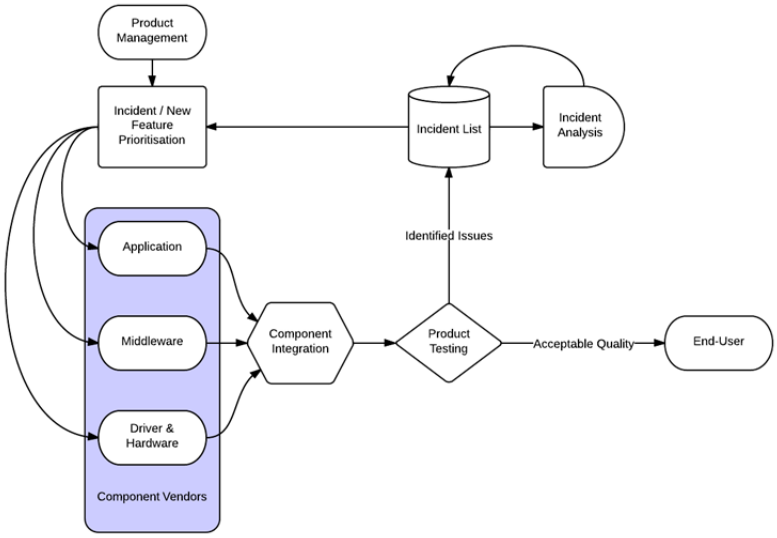

Figure 1: High-Level Product Development Process (own research)
Source: Own research

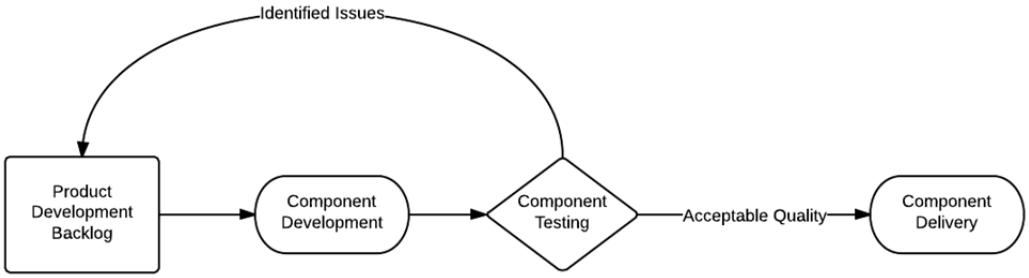

Figure 2: Component Development Process
Source: Own research

B. The Prevailing Business Logic following the Customer Service Initiative

The focus group came to the realisation that although the classical mode of operation was easier to measure, and therefore easier to report on, it was not what was working – although something was indeed working as the departments involved had provided the first 'clean' product launch in the company's recent history.

The culprit identified was the method of operation between the Application, Middleware and Product Management ('group A'). Rather than following the classical processes and procedures, these teams were closely integrated and co-dependent. It was even suggested in the focus group that the Middleware and Application vendors be seen as a single vendor by the Component Integration, Testing and Analysis departments ('group B'). Respondent A [22], a manager of two departments within group B argued prior to the product launch that this closely integrated relationship was undermining the ability for his departments to accurately measure their quality and control the overall quality of the product. The focus group, on the other hand, identified the highly integrated relationship as the key driver of the product success post-launch.

This shift in logic, or breaking of the classical paradigm, was due to the implementation of Agile development procedures in the Application development team. Agile software development puts emphasis on discussion and relationships over documentation and formal requirements. The Product Management department embraced this development strategy as Agile embraces specification/scope change as a perfectly natural phenomenon and allowed for them to physically see progress in the product every two weeks. With a lack of classical specifications and test-reports, the down-stream testing teams resisted this development methodology – as it became difficult for them to measure their performance – in line with the comment of Respondent A [22] above. Respondent B [23], the Agile champion within the Application development team often stated in jest "*We're trying to launch a product, not create a bug-tracking tool!*" in reference to the organisational culture of the teams composing group B.

At the time of the initial focus group, it was apparent that there had been a shift from the original divisional design incorporating goods-dominant logic, to an Agile strategy that is in essence a strategic representation of service-dominant logic supporting the Development Partner view of the

Outcome Value Proposition [12] [29] in terms of providing value to the organisation at large.

C. The Impact of the Customer Service Initiative on the Product Development Division

As identified in section above, there had been a shift from GDL to SDL yet the research shows that this shift was not due to the strategic customer service initiative. The author could find absolutely no correlation between the customer service initiative and the transition from goods-dominant to service-dominant logic. It is widely agreed in discussion with staff in the product development division that the customer service initiative did not penetrate the division at all – and has had no lasting effects except for an incomplete poster on a wall titled "Customer Service Storyboard". Even when asked directly what impact the customer service initiative had on the division as a whole, a manager of one of the departments responded: "*Not at all – absolutely none!*" [24].

D. Constitution of, and Nurturing, a Service Culture

In identifying the prevailing business logic and culture of the organisation two contrasting 'sub-organisations' were acknowledged, group A and group B, with group A displaying the characteristics of a service culture. Literature on the subject of service culture identifies two contrasting views on its management; namely the Cartesian-Newtonian (traditional) view and a Complex Adaptive Systems (CAS) view [35]. The leadership of the organisation under study, while not actively realising it had adopted a predominantly CAS approach.

When conducting Agile retrospectives, team-leaders identified emergent behaviours in their teams and nurtured the positive ones. These emergent behaviours include the use of automated tools to aid development, the use of paper cards (rather than electronic database) to capture requirements as this made them easier to visualise, and the creation of an inter-departmental recreation area. Negative behaviours were disrupted as soon as possible – this included simple environmental irritations that demotivated staff (such as non-working air conditioners) up to a common practice of Agile that was initially implemented but later scrapped: at the end of every 'sprint' (development iteration), Agile strategies require the development team to demonstrate their progress to the customer. This initially went well as senior developers demonstrated their work – but as the audience increased some of the development team felt intimidated (perfectly understandable given the normally introverted nature of the foreign-national contracted software developers). This issue was resolved more by accident, but as soon as management noticed the positive change they threw their support behind it: a small 'party' was thrown for the development teams in their recreation area when a major milestone was reached. Senior management and C-level staff attended this where they could then interact with the developers and the product in a more jovial and informal manner.

The research results echoed Bennet and Bennet (in [35]): that the culture within group A was an emergent behaviour and not actively induced by management – as no traditional management could cause developers to stay in the office late enough to be locked in, or interact so closely with their Middleware development counterparts 8700km away that the Integration team saw them as a single vendor. Similarly, no traditional management practice was identified to nurture a service culture within group, however the strategy discussed in the focus group was to embed group B members within the development cycle of group A and hope that the culture of group A is strong enough to withstand this disruption. While this is quite a drastic measure it has merits in that the members of group A have a very strong identity and culture that is supported and praised by management, while those in group B lack that team-confidence and team-identity.

Wood and Tasker [37] have argued that manufacturers adopting servitization strategies are "*unable to achieve service excellence in the mind of the customer without a paradigm shift in thinking at corporate, team and individual levels*". They further make a differentiation between the "*voice of the customer*" and the "*mind of the customer*" [37], arguing that traditional product development best practices, such as systems engineering, only take into account the voice of the customer in their requirements analysis. Agile software development, on the other hand, requires the customer (or a representative of the customer) to be on hand during the design and development of the product to ensure that the customer is always consulted – a step in the right direction from product development to value co-creation. Aurich, Fuchs and Wagenknecht [1] point out that when designing a product-service system, the service design is usually performed as a separate procedure from the product design "*resulting in a largely insufficient consideration of the mutual influences of products and technical services*" as was typical of the organisation's previous product launches. Wood and Tasker [37], drawing on Bijker's socio-technical case studies, state that a social approach to design (such as Agile development) will lead to "*fundamentally different thinking about the nature of design*" – a fundamentally different culture.

V. CONCLUSION

The section above addressed each of the secondary research objectives in turn – with one unexpected key point: the strategic customer service initiative had no impact on the product development division. The primary research objective was thus not met, although insights gained from the study still assist in answering the secondary research questions, which were:

Can a services orientated culture be borne from service-dominant logic?

From the results and literature study, the answer to this question is a clear and resounding 'yes'. By its very nature,

service-dominant logic requires a very close interaction between provider and customer, so much so that the customer's tacit knowledge is often transferred to the provider. This results in an increase in skill and 'customer-awareness' in the provider, which are key tenets of a services oriented culture. Within group A of the organisation under study, the service-dominant logic mechanisms were first put in place before the service culture evolved.

Is service-dominant logic a natural phenomenon that occurs when aligning departments to a customer service strategy?

Unfortunately this question could not be answered with the results taken from the organisation under study. The results do prove, however, that a strong and deliberate focus on customer service is not *required* to invoke a transition to service-dominant logic within an organisation.

How does the organisational culture impact customer satisfaction?

The culture within the development teams allowed for quick and easy changes to be made to the product based on feedback from continued field-trial exercises. Historically, field-trials would only be embarked upon once the development was complete but for the first time in the company's history the product could be trialled during its development phase by quite a large number of both internal (within the department and from other departments within the division) and external (other employees from all divisions of the organisation at large, and also a pool of customers) users. Where a classical development department would be apprehensive about customers trialling the product while it was still under development, the culture of the team was one of "*we'd rather fail early*" [24] readily accepting as much feedback as could be provided. From comments made in social media, it was widely accepted within the organisation that the product launch has been the most successful in recent history with many more satisfied customers expressing their satisfaction than in previous launches, and almost none dissatisfied. Complaints around the product are normally concerned with the cost of the product in addition to the cost of the service offered, rather than the experience of the service in the use of the product.

Can a transition to service-dominant logic be intentionally managed?

Group A's transition from GDL to SDL was not intentionally managed – rather it evolved naturally in the adoption of Agile development practices. Once the advantages of the method of operation within SDL-aligned departments were realised by management, an attempt was made to intentionally manage the transition within group B. This action represents an intentional, traditional management approach to the transition from GDL to SDL, yet a complex adaptive systems approach in eliciting a service culture within the division.

What impact does service-dominant logic have on the internal interactions between product developing and customer facing divisions?

SDL allowed for a very close interaction between the product management team and the developers. This had a positive impact for both departments in that there was active discussion and quick turnaround times on requests from the customer facing product management teams, and field-trial management teams. The responses from user-experience testing and field-trials were treated as equal, if not more important than the regular development backlog. The interactions then become very informal and undocumented as the departments become highly integrated. This is in contrast to the classical GDL approach where each and every change would have to be documented and presented to the development team in a meeting to assess the merits and risks of each.

A. Discussion

Although the customer service initiative of the organisation under study had no perceived impact on the product development division, it was demonstrated that a service culture within the organisation was a direct result of a shift from goods-dominant to service-dominant logic within group A. The corollary of this, that a service culture cannot be engendered from an organisation operating with goods-dominant logic, while not categorically proved, was supported in the example of group B. The original problem statement, therefore, holds true. The customer service initiative of the organisation under study did **not** penetrate the product development division adequately. The division did however achieve customer satisfaction despite this due to its adoption of a service-dominant approach to development within some departments. Had the initiative been strategic it is likely that the service-dominant approach would have garnered more support from the beginning and prevented the rift between group A and group B in the division.

The calls for further research by Gillespie et al. [13] and Ostrom et al. [21] have now been qualitatively and empirically answered: the service culture engendered within group A was identified as key to their effectiveness, and the effectiveness of the product development division, with group A at the centre, was key to the end-user customer satisfaction.

From the results of this study and supported by Gillespie et al. [13] and Ostrom et al. [21] the author proposes the following hypothesis: for a customer service initiative to persist and evolve into a service climate and eventually service culture, internal departmental interactions and processes need to shift from a traditional goods-dominant logic to service-dominant logic.

Further research, especially additional applied research studies within other traditionally goods-dominant product development industries, will likely go further to categorically prove this hypothesis and entrench service-dominant logic as the de facto standard for product development within

organisations offering an integrated package of products and services.

A follow-up study on the success of the division following the initiatives undertaken to better integrate group A and group B would prove fruitful in analysing the active management of a service culture.

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