



Case study

Capturing and measuring technology based service innovation—A case analysis within theory and practice

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ABSTRACT

While economies in the industrialised World have become increasingly knowledge driven and service based, much of the work on capturing and measuring business value is still constrained and steeped in the thinking of the manufacturing era. One area that is more susceptible to measurement is the field of technology based or enhanced services. This case analysis seeks to explore how a service operator, such as an international airport, can gauge value from investment into IT. We examine how the airport operator combines a variety of accounting techniques and other tools to capture value from their IT investments. We explore how the operator could improve their measurement of business value derived from their IT investment. One observation of practice is that value capturing tools and techniques are used in parallel rather than 'in sync'. Drawing on the notion of user innovation, we argue operators should embrace a systemic approach in adapting and modifying measuring regimes to accommodate service based innovation.

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1. Introduction

The status of developing indicators for service innovations has been recently argued for by Abreu, Grinevich, Kitson, & Savona (2010) and Schmoch and Gauch (2009), who all posit that there is a need for specific service innovation metrics to be developed. Organisations use research and development and product-development metrics to measure innovation. Common methods include an annual research and development budget as a percentage of sales; number of patents filed (and/or used to quell competitors' activities); the number of active projects; and the number of ideas submitted by employees, etc. (Houzer, 1998).

Management accounting approaches, relating to measuring innovation, tend to either take a 'one off' based calculation that allows the innovation to happen (or not), or they aim to take a 'mysterious' balanced score card approach (Kaplan & Norton, 1992). The use of balanced scored cards has limitations. The fundamental problem is that they lack the ability to fully conceptualise the complex adaptive nature of service innovation and value, and therefore underpay the co-production and co-creation of value as well as failing to understand the service offering to the 'customers customer'.

The area of measuring value from service innovation tends to be informed by partisan accounting methods such as NPV, DCF, and Payback. These tend to adopt a more objective and short term evaluation of the particular business unit's ability to deliver business value from service based innovation. Perhaps it is more important to take a more strategic, organisational and subjective based view, which allows for competing contexts for innovation and impacts on the organisations capability and capacity to be innovative, to be explored (Mouritsen, Hansen, & Ørts Hansen, 2009).

2. Accounting for service innovation

Den Hertog (2010, p19) defines service innovation as "a new service experience or service solution in one or several of the following dimensions: new service concept, new customer interaction, new value system/business partners, new revenue model, new organisational or technological service delivery system."

When looking at innovation and value, what is apparent is that existing accounting techniques and tools are rarely concerned with the "intricacies of innovation" (Mouritsen, Hansen, & Ørts Hansen, 2009, p739). Often, the same techniques and tools are used for all organisational wide priorities, however, what is interesting is that the current tools used are contradictory (Mouritsen et al., 2009). This is not surprising given the complexities of service based innovation and the shift in management accounting from indicating that the creativity and invention stages of innovation cannot be

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measured (Abernethy & Stoelwinder, 1991) towards seeing management control accounting as a vehicle to enable and stimulate innovation (Widener, 2007).

2.1. Measuring value

Accountants have suggested an array of measures (recorded value, assessed value, earning potential, Return on Investment, etc.) which reflects a disciplinary, historic and current view of what constitutes a business and its associated business logic. Economists offer exchange value or cost value that correspond to their views of economic units and market mechanics. Operations managers offer a set of measures that reflect how they perceive the world, with stock value, esteem value, replacement value, etc. However, what tends to be missing from this array is that of the consumer or user value, or customer value and how they actually see the service offered to and consumed by them.

3. Measuring IT enabled service innovation

This can be broadly classified as being an objective or implied interpretations of value and the impact of value drawing upon accounting and economic based techniques, such as rate of return, payback, and information value coefficient, in order to assess the value of IT to an organisation. However, establishing a linear cause and effect continues to be elusive (Barnier, 2011; Ross & Breath, 2002). The alternative, more subjective stream of research tends to draw on the behavioural and cognitive sciences.

IT value has been analysed and measured at different levels: individual, process, business unit, corporate, network of firms, industry, and economy. Depending on the purpose and level of analysis, different metrics of IT value have been developed. For the last few years, in the age of austerity, the value of IT has focused on cost-cutting and efficiency, with the prediction that it will shift to business growth (Gartner, 2012¹) and business value creation as companies emerge from recession.

4. Methodology and data collection

For this study an interpretive approach was adopted. The data collection approach has been informed by personal observations, four elite interviews and active participation in the processes analysed and supported by FlyWithMe International Airport² (FWMIA) corporate documentation (as outlined below).

5. FlyWithMe International Airport (FWMIA)

5.1. General Context and Background

FlyWithMe International Airport (FWMIA) is a privately run company founded in the 1990s with the responsibility to build, own, operate and transfer (BOOT) one of the most modern, functional airport in the world. FWMIA is divided into four businesses units (Aviation, Consumers, Property and Corporate Finance Unit) and two support units (IT&T³ and Corporate Services Unit). These units serve the needs of over 199,000 total aircraft moves per annum and around 16.5 million passengers per year, with a profit before tax or around £100 million, with an increase, year on year, since its inception.

Table 1
Corporate documentation used for the case study.

Document	Description	Classification
<i>Annual Report</i>	120 pages, Corporate details, Financial results, organisation structure, Operational results	Public
<i>Corporate Responsibility Report</i>	55 pages, Balanced Scorecard results, Corporate environment, Personnel statistics	Public
<i>Capex Projects Process</i>	14 pages, Standard Operating Procedure and process description	Internal, Restricted
<i>Capex Project Initial Request Form</i>	2 pages, Form and instructions	Internal, Unclassified
<i>BRS⁵ Project Evaluation</i>	3 pages and 3 Excel Worksheets, Financial Evaluation of Capex Project	Internal, Confidential
<i>Corporate Scorecard</i>	12 pages, Balanced Scorecard Targets and instructions	Internal, Restricted
<i>VBM presentation to unit directors</i>	31 slides, Description of VBM processes, Value drivers and AVA	Internal, Restricted
<i>IT&T Strategy -2014</i>	21 slides, Presentation to CEO	Internal, Restricted

Table 2
The customers of IT & Telecommunications Business Unit.

The Corporate FWMIA environment including all systems (e.g. ERP, MIS, e-mail) and to approximately 720 full-time and 500 outsourced employees
The Airport Operations by supporting mission critical systems like the Airport Operational Database (AODB), the Flight Information Processing (FIPS) and the Baggage Handling Sortation
The Airport Community members 412 companies and 17,000 users
Passengers and Consumers providing direct B2 C services to 1.8 million Internet visitors, 10 thousand wireless users per month and 16.7 million users on specific systems such as the Flight Information Display System and the Common Use Self Service Check-in
External Customers 20 International and Hellenic outside the airport customers where mainly consulting services are offered

In relation to the current study, the Board of Directors (BOD) is the governance forum which approves all strategic plans, operational and capital budgets. FWMIA's Board of Executives (BOE), comprising of the Chief Executive Officer (CEO), the four Business Units' Directors and the Executives of the two corporate units. This body acts as the primary management team for FWMIA.

5.2. FWMIA's Information Technology & Telecommunications (IT&T) Business Unit

The vision of the FWMIA's Information Technology & Telecommunications (IT&T) Unit is to contribute substantially to the value creation of the airport company and the prosperity of the airport community (airlines, handlers, passengers, concessionaires, governmental authorities' airport shops, etc) (Table 1).

IT&T has evolved beyond the state of a traditional IT department, what has traditionally be coined 'keeping the lights on', to a profit centre, having developed a comprehensive portfolio of IT and Telecommunication services offer, operate and support, the airport community and other international airports, thus developing a new revenue stream for the airport company. Table 2 summarises who IT&T provide services to.

¹ Predicts 2011: Enterprise Information Management Programs Connect IT and Business.

² The name fiction to protect identity of the actual case.

³ An automatic baggage system.

⁵ Value drivers leverage business profitability and reduce risk.

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