Institution: London South Bank University

Unit of Assessment: Business and Management

Title of case study: A novel e-platform that has transformed a traditional sheet music business into a global digital enterprise.

1. Summary of the impact (indicative maximum 100 words)

This case study demonstrates how research into Object Orientated programming has resulted in a feature-rich e-commerce platform that has transformed the management and operations of a traditional sheet music company (Faber Music) and its expanding business partner network.

Impact includes:

- Adoption of an efficient electronic enterprise and distribution model that provides global reach at significantly lower costs;
- Creation of a new income stream for the Company (£40k year 1, rising to £260k year 3 and growing) based upon digital distribution;
- A novel e-partner scheme delivering benefits through access to a wider range of digital content and routes to market;
- Mitigation of media piracy by being able to minimise the price differential as seen by the purchaser;
- Recovery of $1million from an illegal download site in Russia who are now an e-partner.

2. Underpinning research (indicative maximum 500 words)

In a competitive global market, businesses must be agile and respond to changes and new ideas. Business functions, processes, data and systems must be accessible, integrated and supported by well-designed information infrastructure. This necessitates a robust information systems strategy that maps the business needs and is adaptable to future needs.

In the 1990s, Object-Oriented (OO) programming was a novel and emerging approach with potential to address and solve a range of business data management problems and challenges.

This impact case study is underpinned by research in OO carried out at London South Bank University (LSBU) during 1996-2003 by Dilip Patel (Principal Lecturer) and Shushma Patel (Senior Lecturer). The former was recognised as one of the 50 world leading exponents of Object Oriented (OO) technology at the time [1]. As well as being the founder of the first International Conference in Object-Oriented Information Systems (OOIS), he materially contributed to the industry-led Accredited Standards Committee (X3H7) and the Object Management Group (OMG) Business Object Domain Task Force.

A generic Object Oriented (OO) organisational and enterprise modelling approach was proposed by LSBU to support the implementation of integrated business objects. A business object model was defined and tested for British Telecommunications that can be reused as a pluggable component in OO enterprise systems architecture. The research explored software development from a framework perspective without having to develop systems from scratch. A customer business object model was developed to illustrate how generic business objects can be reused in different industries, with minimum change to the underlying software.

The use of OO was shown [2-4] to be effective in integrating and accessing legacy systems via the emerging web technologies, allowing organisations to fully integrate data, information and systems with that of stakeholders and third parties. LSBU's research explored the use of 3-d information visualisation using standard component-based OO analysis. The integration of OO technology with artificial neural networks also supported the intelligent interrogation of on-line documents. Simple keyword queries result in tens of thousands of hits, however, LSBU's research demonstrated how documents in a corpus can be searched according to semantic content, resulting in more relevant search results.

The research resulted in the development of a Generic Reusable Business Object Model (GRBOM) framework. The framework was demonstrated to be applicable to different industry sectors in supporting various organisation and change dimensions, such as strategy and policies, operations, people, markets and products, technology, legislation and regulation, in addition to reuse, genericity, pattern and business object modelling. The reuse, pattern and business object modelling dimensions provide appropriate tools for the initiation and development of systems (5).

Outputs from the research has led to:

- The development of a library of reusable objects for use in generic enterprise systems;
- The building and use of enterprise architectures based upon GRBOM;
- Successful trials of GRBOM with British Telecom;
- The development of a roadmap to support the integration of business functions.

Although the framework was developed 15 years ago, the platform technology and the tools are just as applicable in the business environment of today. It is flexible and extendable with wide ranging implications for addressing business issues and opportunities to eradicate obsolescence.

3. References to the research (indicative maximum of six references)

1. Hanley D and Schleifer P (1998). Who's Who in Object Technology. Zamir, Saba (Editor). In *Handbook of Object Technology*. CRC Press LLC

2. Hanley D and Patel S. (1996). A 3d-visualisation system for large WWW based document collections. Patel D, Sun Y and Patel, S. (Editors). *Proceedings of the 3rd International Conference on Object Oriented Information Systems (OOIS'96)*. Springer-Verlag, London.

3. Choudhury I, Sun Y and Patel D (1997). Generic Reusable Business Object Modelling – A Framework and its Application in British Telecommunications plc. Orlowska, Maria E. and Zicari, Roberto (Editors). *Proceedings of the 4th International Conference on Object Oriented Information Systems (OOIS'97)*. Springer-Verlag, London

4. Hung K and Patel D (1998) Modelling Domain Specific Application Frameworks with a Dynamic Business Object Architectures: An Approach and Implementation. Proceedings of the Object Oriented Programming Systems, Languages, and, Applications (OOPSLA'96, 97 & 98). Workshop on "Business object design and implementation". Patel D, Sutherland J and Miller J (Editors). London.

5. Patel D and Patel S. (2003). The Cognitive Process of Problem Solving: A Business Perspective. International Journal of Brain and Mind, 4(2), pp283-295.

4. Details of the impact (indicative maximum 750 words)

This case study provides an illustration of how research has resulted in a feature rich e-commerce platform delivering organisational and economic impacts to a world leading publisher, Faber Music Ltd (FM). Founded by Benjamin Britten in 1965, FM is a publisher and rights owner of classical, contemporary and educational music as well as representing authors, artists, and composers.

In 2008, FM recognised the need to embrace the latest digital and web based technologies to improve operational and business performance and to extend its product offering and deliver novel services [1,2]. Through the proactive endeavours of the University's Knowledge Transfer Centre, a KTP partnership (KTP007073, £128K; 2008-11 [2,3]) was established in 2008 to develop and implement a collaborative digital platform based upon LSBU's OO research and expertise to meet the defined developmental and commercial objectives of FM. The KTP had to accommodate and meet the challenges presented by the changing business and technological environment and to be future proof. Key challenges for the KTP were to deliver web-based solutions that: (i) enable digital rights management, (ii) tracking of and managing rights and royalties payments, (iii) territorial copyrights, (iv) managing exchange and tax rates and (v) manage payments to e-partners. Overall,

these areas represent millions of independent transactions, since the sale of a £2 sheet music score on average involves 6 independent transactions.

Independent Consultants established in an interview (2013) with the Digital Director at FM, "*that we needed to provide a much-needed platform through which third-party musicians could license their arrangements via digital channels. As no such system existed, this innovation would remove the hassle associated with licensing for digital sheet music*" [1, 2].

The resulting e-commerce platform, developed through the KTP collaboration, was deployed in 2009 by FM. This has had significant impact on FM's business [1,2]. It has:

- Created a new revenue stream £40K in 2008/9, rising to £260K in 2011/12 and is budgeted to produce £400K in 2013/14 and increase exponentially thereafter, with increased profitability;
- Led to the creation of a new post within FM, that of Digital Director.
- "*Given us an electronic distribution model that gives us wider reach and a lower cost of distribution*" as a result of not needing to produce and store physical materials;
- "*Put us in a stronger cash positive position as people pay on download and copyright owners get paid quarterly, improving our overall profitability*";
- Identified and reduced illegal (intentional and unintentional) downloads;
- "*Provided us with a mechanism to obtain and exploit market trends and understand our partners and customer needs better*";
- Increased directly and indirectly FM's customer base and international reach;
- Created an e-Partners scheme linking other related businesses and customers to FM [4].

The Digital Director in June 2013 commented in relation to e-business and the collaboration with LSBU: *"it is fair to say that we were out of touch with our contemporaries, now we are cutting edge"* [1,2].

She has also stated that: "*What we now have, as a direct result of the KTP project, is a highly effective e-Partners scheme; we have 45 partners on our e-partner scheme, of which 35 are new business partners for Faber*". The novel e-partners scheme allows other rights owners (artists, radio stations and exam boards) to arrange and deliver content via a formal association with FM worldwide.

The reach of the e-Partner scheme, the first of its kind in this market sector, is illustrated by FM's new and enhanced links with [5]:

- **Marketing partnerships**: for example, with bands (Queen, Elbow); theatre (Love Story, Sister Act); music forums (Music Radar, Cleartabs); Radio Stations (Classic FM); Music Apps (Guitar Buddy); Composers (Carl Davis) and Warner/Chappell Music, which provide FM and its partners with a more extensive digital library for distribution and retail [5];
- **Sheet music publishers:** for example, Boosey and Hawkes is the largest specialist classical music publishing company in the world. The e-partners scheme provided their first digital content distribution and sales platform;
- **Music Arrangers:** for example, PDF Brass [6] a one man business, involved in composing, arranging and distribution of music joined as an e-partner in 2009, since which its revenues and reach have increased 10 fold. The proprietor acknowledged that bands are known to create cohesion in small communities such as in Africa, and is a mechanism for social inclusion and prosperity;
- **Education Music Services**: Sing Up [7], a national competition set up under the last Labour Government, has, as a result of its link with FM's e-partner scheme, been able to acquire and distribute digital music and teacher notes to over 90% of the 20,000+ English infant schools. A representative of Sing Up indicated that this would not have been possible without being an e-Partner. Singing is known to improve: (i) numeracy and literacy, (ii) increase IQ by an average of 7 points; (iii) increase pupil concentration; (iv) promote self-confidence, and (v) improve social skills [7,8];

- **Music Shops**: Chappell of Bond Street was the first e-partner to use their own e-commerce platform for a seamless integration of two platforms to enable customers to purchase content from all e-partners [4].

The platform has allowed FM and its e-partners to mitigate media piracy by eliminating price differential, as seen by the purchaser, but delivering original, quality products (correct arrangements and lyrics) and legal ownership.

"The project has gained external recognition from the public, our customers, our competitors and the industry," says the Digital Director. *"Faber is really pushing the boundaries when it comes to digital exploitation"* [1,2].

An unforeseen but significant benefit resulting from the research has been to allow (via the KTP) FM to challenge illegal download websites [9]. The significant outcome of this is that FM has negotiated a $1million revenue payment from an illegal download site [1,2].

5. Sources to corroborate the impact (indicative maximum of 10 references)

[1] Report of Independent Consultants (The Innovation Partnership), 2013. Contact Managing Director, The Innovation Partnership. – covers LSBU contribution to the development of the e-platform and to the resulting growth and success of Faber Music.
[2] Contact: Digital Director, Faber Music Ltd.
[3] KTP007073 Final Report with Faber Music Ltd – available on request from LSBU
[4] http://www.fabermusic.com/e-partners.aspx
[5] http://www.fabermusic.com
[6] The Innovation Partnership Interview with proprietor of PDF Brass. Contact: Managing Director, The Innovation Partnership
[7] The Innovation Partnership Interview with Sing Up. Contact: Managing Director, The Innovation Partnership
[8] http://www.singup.org/news-local-events/news-article/view/94-research-outlines-benefits-of-music-music-manifesto-news/
[9] http://www.lsbu.ac.uk/case-studies/faber-music-fighting-illegal-download-battle