Prudential Risk Management of IT Sourcing Strategies: A Case Study of an Australian Bank

Research-in-Progress

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Abstract

Banks are under market pressure to reduce costs and employ different IT sourcing strategies to reduce IT costs: outsourcing, outsourcing-offshoring, and multi-sourcing. In Australia, banks are highly regulated under the Australian Prudential Regulatory Authority (APRA) which manages implementation of the Australian banking act. We selected a large domestic bank in Australia (WBC) for our pilot study. This paper aims to demonstrate the complexity and risk of the IT multi-sourcing delivery environment within WBC. We outline an approach to study risk management of IT multi-sourcing that could be applied across the Australian banking industry. After investigating the decision theories that underpin the selection of IT delivery models used within WBC, this study analyses public documents to reveal the trends and effects of outsourcing contracts over the past five years, and compares the alignment of WBC’s risk framework with that of APRA to recommend proactive risk management framework to mitigate multi-sourcing risks.

Keywords

Offshore-outsourcing, outsourcing, risk management, prudential regulation.

Introduction

The Australian Financial Services Industry (AFSI) is comprised of four major Australian banks, a number of small domestic banks and several international banks with a local presence. The four major banks representing approximately 77 percent of the AFSI (Australian Trade Commission 2011). This research in progress focuses on Westpac Banking Corporation (WBC), the second largest of the four major Australian banks.

The AFSI is a highly regulated industry governed by the Australian Prudential Regulatory Authority (APRA) which was established by the Australian Government in 1998 to govern the AFSI under the legislation in the Banking Act (Australian Government 1959). APRA’s mission is “to establish and enforce prudential standards and practices designed to ensure that, under all reasonable circumstances, financial promises made by institutions we supervise are met within a stable, efficient and competitive financial system” (APRA 2010). APRA utilizes prudential standards as guidelines on how the banks should manage all aspects of prudential risk associated with their business. Prudential risk is any risk that will have a material impact on customers or the Australian economy. The effectiveness of tight government prudential regulation was demonstrated at the time of the global financial crisis (GFC) as Australian banks proved to be among a few banks globally protected from this crisis.

Although profitable, the banks are under pressure from the market to reduce their cost to revenue ratio. One of the main strategies WBC employed to reduce IT costs was to outsource the delivery of IT services. Over the last five years a new trend has emerged to achieve more IT cost savings. WBC adopted an outsourcing-offshoring delivery model for IT services. This has led to a situation where WBC now has a complex IT multi-sourcing delivery model.
The aim of this paper is to explain the mix of IT delivery models used within WBC. We describe the WBC risk framework, and analyze how it aligns with APRA’s risk framework. This paper is structured as follows. The literature review provides definitions of key terms and introduces sourcing models, risk management, decision theories and the research questions. The Research Methodology section summarizes the data sources that inform this research and explain the approach that was used to collect and analyze the data. The Data Analysis section presents the key findings of this research. The Discussion section brings together the information presented in the Literature Review and Data Analysis sections to demonstrate the decision theories that appear to be driving WBC’s sourcing strategies, and highlight gaps that exist in the WBC and APRA risk management frameworks in relation to IT sourcing. The Conclusion summarizes the key findings, acknowledges some limitations and suggests how future work can build on the research presented in this paper.

**Literature Review**

This section describes the various IT sourcing options, risks and the decision theories considered to be most relevant in explaining WBC’s decision making when selecting a delivery model for IT services. This information informs the foundation and research questions of the study and builds a picture of the risks associated with the IT service delivery models used by WBC.

**Sourcing Models**

Dibbern et al. (2004) provided a decision-making framework on IS outsourcing that explained the “why to outsource’, ‘what to outsource’, ‘which decision process to take’, ‘how to implement the sourcing decision’ and what is the ‘outcome of the sourcing decision” (2004). Dibbern et al. presented the reasons a company use when justifying what more they can achieve by outsourcing IS rather than providing the services in-house. The paper provides an extensive history of the evolution of outsourcing and contributes to our understanding of the decision and selection process behind the selection of this as an IS delivery model. The paper is extensive and would form a relevant basis if we were discussing the decision theories behind outsourcing and other forms of sourcing. In this study we are focused on the theories that inform the statements published by the banks to justify their decision, not the decision-theories that formed the original strategy. For this study we focus the discussion on the bank’s use of multi-sourcing (a combination of outsourcing, offshoring-outsourcing and in-house) as their method of delivering IT services and the associated risk with their decision.

There are a number of lenses that can be drawn on to view sourcing delivery models. Kirkegaard (2008) purports the diagram created by UNCTAD, illustrated in Figure 1 illustrates the delivery models used to deliver services and products.
In this paper, outsourcing refers to the provision of services domestically by an external service provider. Offshore-outsourcing relates to services provided from a foreign location by an external service provider. In-house is where services are provided from within the company locally. Offshoring relates to services provided within the company from a foreign location, some authors refer to this sourcing model as a “captive”.

**APRA Standards**

This section outlines and discusses the prudential standards that APRA use to manage outsourcing and operational risk within the banking sector of the AFSI.

**Prudential Standard APS 232**

Firstly in April 2005 APRA released prudential standard APS 232. This standard details the requirements for business continuity management (BCM) services within the banks. The main focus of APS 232 is business continuity planning and management required to overcome IT disasters, mainly concentrated on the potential failure of IT infrastructure (APRA 2005).

**Prudential Standard APS 231**

The second prudential standard was released by APRA in October 2006. APS 231 provides the requirements for managing risk associated with the banks’ outsourcing activities. APRA uses APS 231 to provide guidelines to banks proposing to use outsourcing as a means of delivering IT services (APRA 2006). One of
the guidelines in APS 231 is to meet the requirements in APS 232 regarding business continuity plans (BCP) and the bank’s BCP must be integrated with the external service provider’s BCP before engaging in an outsourcing agreement.

**Prudential Standard APS 115**

The third prudential standard used in this study is APRA’s prudential standard to govern operational risks: APS 115. This standard was released in 2013 and provides banks with guidelines for the assessment, management and reporting of operational risk (APRA 2013).

**Risk Management**

This research evaluates the bank’s IT multi-sourcing service delivery models and associated risks using these prudential standards. This ascertains if the prudential standards (APRA 2005; APRA 2006) and the APRA risk management framework (APRA 2013) provide sufficient proactive risk management.

Comcover is a department within the Australian government that published a factsheet and guidelines paper that summarized the ISO 31000:2009 risk standard (Australian Government Comcover 2010). Comcover provided the following definition of risk based on the ISO standard “the effect of uncertainty on objectives” and risk management as “the management of the effect of the uncertainties”. From an operational risk perspective, APRA implements the guidelines detailed in the Basel II Capital Accord published by the Basel Committee on Banking Supervision (2004) that defines operational risk as “risk of loss resulting from inadequate or failed internal processes, people and systems or from external events. This definition includes legal risk, but excludes strategic and reputational risk”.

In a paper on governance and risk within UK banks, Alexander (2006) refers to “the principal-agent model which generally is concerned with how one individual (the principal) can design a contract which motives another person (the agent) to act in the principal's interest” (2006). The principal-agent model is based on agency theory (Eisenhardt 1989) to explain the relationships where a company uses a third party to deliver products or services on their behalf. One of the reasons Alexander stated for a company using an agent to deliver services is they may be attempting to move risk to the third party. Alexander’s rationale is aligned with one of the concepts of agency theory that is to shift risk to the service provider. Alexander reviews the systemic risks associated with using an agent to deliver services. The impact can affect not only to the banks, but also the economy as a whole: “Systemic risk can also arise from problems with payment and settlement systems or from some type of financial failure that induces a macroeconomic crisis” (2006). Alexander supported this statement by linking it to the Basel Committee statement on the importance of corporate governance within the banking industry to support national and global economic stability. Alexander recognizes the role of a strong contract to manage risks associated with the use of services from an agent, but also pointed out the contract provides reactive risk protection but does not provide a mitigation of the risk.

Another risk that is documented in the APRA prudential standards on outsourcing (APRA 2005; APRA 2006) is the security of data. Mathew et al. (2013) highlighted a risk associated with offshoring software development: the “shirking and misappropriation of information assets” (Mathew et al. 2013). This is a risk that, although addressed in the APRA outsourcing prudential regulations, is not addressed in APRA’s risk prudential regulation (APRA 2013).

Willcocks et al. (1999) conducted a longitudinal study into outsourcing within the UK defense sector. Their study has revealed the risks associated with outsourcing and illustrated the need for the right governance model, the selection of the right service components to retain and outsource, and building a contract that aligns with the governance model and the vendor selection process to select a vendor that fits the companies’ culture. Although focused on the risk associated with outsourcing and the mitigation strategy, Willcocks et al.’s discussions are aligned with the risks associated with the banks and their multi-sourcing strategy.

**APRA Risk Position**

In 2003, APRA provided WBC with approval to use Advanced Measurement Approach (AMA) under Basel II and the capital framework to manage operational risk (Basel Committee on Banking Supervision 2004).
**Decision Theories**

After reviewing relevant literature the following two theories were selected as offering the best explanation of decisions on outsourcing.

**Resource Based View Theory** (RBV) (Barney et al. 2001) argues that company resources form part of the company’s competitive advantage and are a key decision driver. Organizations embarking on major transformational activities may need access to resources that are not readily available in their local market. This then requires the organization to fulfil the requirement from other markets through offshore-outsourcing activities. This position is also supported by other research on sourcing decision-making (Srivastava et al. 2012; Tate et al. 2009; Whitaker et al. 2010).

**Transaction Cost Economics** (TCE) (Coase 1998) argues the main decision-making driver for companies is the cost of producing their products or services. It is claimed that outsourcing the production of products or services can reduce the transactional cost of producing the product or service. However it does require a strong enforceable contract to ensure savings are achieved. In this context, the contract is represented by WBC’s Master Service Agreement (MSA). This theory is supported by the literature as a key decision-making theory used by companies when making the decision to use outsourcing and offshore-outsourcing as an IT delivery model (Herath et al. 2009; Ørberg Jensen et al. 2011; Roza et al. 2011; Srivastava et al. 2012; Tate et al. 2009; Whitaker et al. 2010). The drive to offshore-outsource IT services is one of the main cost saving strategies adopted by the banks (Bennet 2012).

**Research Questions**

Based on the academic and practice theories and models examined in the literature review section the following research questions are formulated in this paper:

- **RQ1.** Does WBC’s employ complex multi-sourcing solutions driven by business unit demands to deliver their IT services?

- **RQ2.** What are the risk and governance model/s used by WBC to manage risks associated with its IT services multi-sourcing strategy?

**Literature Review Summary**

As highlighted by Raman and Chadee (2007) considerable research has been conducted on this relatively new phenomenon of international outsourcing or offshoring of information technology services by advanced industrialized countries to less developed countries. However, “given the multidisciplinary nature of the subject, the literature on offshoring is often disparate and subject to confusion” (Raman et al. 2007). The literature review revealed a number of gaps. For this study we focused on a gap that revealed a lack of research focusing on AFSI regulatory and risk governance of Australian banks’ IT multi-sourcing strategies.

**Research Methodology**

**Analysis Method**

The data gathering and analysis was performed in three stages. In Stage 1 a review of the bank’s annual reports and media releases was conducted to develop a picture of the sourcing landscape for WBC.

In Stage 2, to analyze the bank’s IT outsourcing and IT offshore-outsourcing activities, the annual reports from 2009 to 2013 were examined to extract information on the annual IT spend, IT headcount, and IT contracts.

In Stage 3, analysis was undertaken to review the risk management framework adopted by the bank to enable a study of the level of corporate ownership of each risk type.
**Data Collection Approach**

The research draws on information from academic publications, bank reports in the public domain, IT service providers, government agencies and consultancy companies. The sources of this information are shown in Table 1.

<table>
<thead>
<tr>
<th>Bank</th>
<th>Website</th>
<th>Information Gathered</th>
</tr>
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<tbody>
<tr>
<td>WBC</td>
<td><a href="http://www.westpac.com.au">www.westpac.com.au</a></td>
<td>Annual reports, media releases, risk framework, governance frameworks</td>
</tr>
<tr>
<td></td>
<td><strong>Government/Regulatory</strong></td>
<td>Risk framework, Governance frameworks, regulations and communications on IT outsourcing and IT offshoring</td>
</tr>
<tr>
<td></td>
<td><strong>Academic</strong></td>
<td>Journals on decision theories, governance models, risk theories and models associated with outsourcing, offshoring &amp; offshored outsourcing</td>
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<tr>
<td></td>
<td><strong>Newspaper &amp; publications</strong></td>
<td>Articles on Australian banks outsourcing or offshore IT functions</td>
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<tr>
<td></td>
<td><strong>Service Provider</strong></td>
<td>Verification of information gathered from the bank</td>
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<td></td>
<td>Tata Consulting (TCS)</td>
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Table 1 - Data Sources

In Stage 1, the content of all reference materials extracted from the public domain was stored as a QSR NVivo project. QSR NVivo is used to perform a systematic and rigorous content analysis of the public domain documents stored in the NVivo project (Krippendorff 2013).

**Data Analysis**

**WBC Background and IT Sourcing Landscape**

WBC founded in 1817 is the second largest bank by capitalization in Australia: at 30th September 2013 market capitalization was $101.8 billion and total assets $697 billion. WBC has 35,597 full time employees, a total revenue of $18,833 million with operating expenses of $7,710 million (WBC 2013).
Table 2 – IT Sourcing Landscape for WBC

The sourcing landscape in Table 2 demonstrates WBC uses a complex mix of outsourcing, offshore-outsourcing and in-house delivery methods to deliver different components of their IT services (IT multi-sourcing). It can be seen from Table 2 that the bank uses outsourcing to deliver the majority of IT infrastructure services. The mix of delivery methods becomes more complex in the application services business unit. WBC has kept enterprise services in-house as this is key IP for the bank’s IT strategy.

WBC IT Sourcing Analysis

In Stage 2 we compiled the WBC sourcing trend analysis as summarized in Table 3. This table provides key data on the bank’s staffing and IT Service Provision and was extracted from WBC Annual Reports to inform the next stage of the analysis (WBC 2009; WBC 2010; WBC 2011; WBC 2012; WBC 2013).
To provide clarity to the information in Table 3 we provided a set of definitions:

- **FTE** – Full Time Equivalent, full-time, pro-rata part-time, temporary and domestic contract staff
  
  (Note: unlike most organizations, WBC includes domestic contract staff in FTE.)

- **IT Services** – IT infrastructure maintenance & support, data center, desktop, network, telecommunication and application development & maintenance (ADM) services, excluding business processes that manage the bank's customer business.

- **IT Outsourcing** – Domestic IT Services delivered and managed by an external IT Service Provider from within Australia. These are managed under an Outsourcing commercial agreement based on defined IT Services.

- **IT Offshore-Outsourcing** – IT Services delivered and managed by an external IT Service Provider from outside Australia.

It is important to note that during the time period under review, WBC introduced a strategic improvement priorities (SIP) program to transform and modernize the bank. The SIP impacts all areas of the bank, not just the IT business unit.

**Significant long term IT Service Agreements**

Driven primarily by the SIP programs WBC entered into agreements with three IT offshore-outsourcing external services providers between 2010 and 2013. These agreements have had a direct impact in the IT service delivery model at WBC:

1. On 25 June 2012, WBC commenced a five year agreement with Tata Consultancy Services (TCS) India to provide maintenance and development (M&D) support within the information systems area of technology. In November 2012, WBC commenced an additional five year agreement with TCS to provide M&D support within the customer self service area of technology.

2. On 25 June 2012, WBC commenced a five year agreement with InfoSys Technologies Limited (India) to provide M&D support within the testing and corporate systems areas of technology. In November 2012, WBC commenced an additional five year agreement to provide M&D support within the group customer master and customer assisted services areas of technology.

3. On 30 September 2013, WBC entered into an agreement with IBM Australia Limited to provide project delivery resources from India specific for Integrated Migration and Transformation Program (IMTP) requirements.
Further Analysis of WBC’s Outsourcing trends

Based on Table 3, Figure 2 shows that the major influences on WBC IT outsource-offshoring.

![Figure 2 – Tracking IT Outsourcing and IT Offshoring in Percentage Terms over 5 years](image)

The process of introducing IT offshore-outsourcing involved the following steps. Firstly the offshore personnel come onshore to train and acquire knowledge transfer (KT) from the current WBC FTE staff. During this time WBC pays a higher daily rate for the personnel while they are onshore, a rate very close to that charged by local contractors. Once the training and KT is complete, the personnel return to their home base and start work from the offshore delivery center. From this point on WBC then pays a much lower offshore rate for the same human resource performing the same duties. Also what needs to be recognized with the data in Figure 2 is that it does not reflect separately the growth in demand that was filled by using offshore resources rather than local contractors or the outsourcer. The important period in Figure 2 to focus on is 2010 to 2011. The KT from the current IT contract workforce was completed and the service provider moved the offshore resources back to home base. This realized a substantial decrease in cost to WBC. The increase in spend after this is due to growth in demand being fulfilled through this model rather than in-house or domestic outsourcing. We can see that the major influences on WBC IT outsourcing activities were firstly the introduction of the SIP programs that dramatically increased the spend due to infrastructure improvement SIP programs that relied on the outsourced service provider. The decrease in 2013 was as a result of bringing outsourced IT services back in-house that previously were performed by the service provider or were duplicated by the outsourcer and WBC.

WBC’s View on Risk

As part of WBC aligning to the APRA risk framework, WBC published an operational risk definition that aligned with APRA’s definition in their annual reports that remained unchanged during the analysis timeframe 2009 to 2013.

The following definition was also developed by WBC to enable them to measure the technology risk associated with the massive changes introduced by the SIP initiatives. APRA and Basel embed technology risk as part of operational risk.

**Definition of Technology Risk** – “Our ability to develop and deliver products and services to our customers is dependent upon technology that requires periodic renewal. We are constantly managing technology projects including projects to consolidate duplicate technology platforms,
simplify and enhance our technology and operations environment, improve productivity and provide for a better customer experience. This includes our current SIPs program. Failure to implement these projects effectively could result in cost overruns, a failure to achieve anticipated productivity, operational instability, reputational damage or operating technology that could place us at a competitive disadvantage and may adversely affect our results of operations.” (WBC 2011)

![Figure 3 - The Bank's Risk Defense Model](Source: WBC 2013 Annual Report, p. 37)

To summarize, the bank's risk management framework and corporate governance model provide comprehensive management and governance of risk within the bank as shown in Figure 3 (WBC 2009).

**Discussion**

The data presented in the Data Analysis section demonstrates that WBC has a complex IT sourcing model that is continually evolving due to changes in market and technology forces and IT sourcing arrangements. The decision theories discussed in the Literature Review section seem to align with the drivers articulated by the CEO of WBC Mrs. Kelly. During a visit in February 2013 to one of Westpac’s operations centers in India, during an interview Mrs. Kelly defended the practice of outsourcing and offshore-outsourcing by saying “It had allowed the bank to work with 'world-class' companies such as IBM and given it access to highly skilled workers. The strategy is not about cost arbitrage, the strategy is about skill enhancement” (Yeates 2013).

WBC has a robust risk management and governance model that is in line with the APRA requirements and the analysis did not reveal any gaps between the APRA requirements as detailed in the APRA standard (APRA 2013) and the implemented model as documented in the Annual Report (WBC 2009). One gap uncovered in the analysis was that while WBC has a clear definition for technology risk, no definition for technology risk could be found in the APRA standards. Hence APRA, the main governance body for AFSI, does not appear to provide clear guidance on technology risk and in particular risks associated with IT sourcing. IT services are dependent on systems, processes and people. It should be recognized that the technology risk definition is independent of how services are sourced and sourcing does not have a risk definition.
Consider an example of a potential catastrophic scenario. One example would be the failure of the IT payments system at one of the four major Australian banks. If the payment system fails, the overnight payments are not processed before start of business. None of the other banks can assist by performing the payment runs for the bank that had the payment system failure because their IT payment services are delivered by staff at a different offshore location or by a different external IT service provider. In the past while these services were outsourced the resources were available locally and this allowed one of the other banks to assist and perform the payment run for the failed bank. It should be recognized that the four major Australian banks process domestic and international State and Federal government payments, all business transactions both domestic and international, all salary, all personal payments would not be transacted. This could lead to government, business and individuals defaulting on payments and could result in total financial and economic collapse similar to that felt by the great financial crash in the USA in 1929 or the GFC in 2007-2008.

**Conclusion**

The results as shown in Table 2 indicate that a complex IT delivery model exists within the bank as a result of decisions made over a period of time and reactions to varying pressures. These complex IT delivery models have a complex associated risk matrix.

There is a need to provide a proactive risk management framework to mitigate risks associated with a failure in an IT system, process or people when an organization sources the delivery of its IT services from more than one delivery model. Hence there is a need to provide a risk weighting that reflects whether the IT services are managed in-house, outsourced domestically or offshore-outsourced. Such a risk weighting matrix would indicate the complexity of the mix of IT service delivery model within each bank. From these findings, we recommend APRA considers the development and management of a more comprehensive risk model that acknowledges and provides clear guidance on how to manage the risks associated with IT sourcing and in particular IT offshoring.

Today each bank has its own business continuity plan that runs these types of scenarios on an annual basis. APRA does not have any framework to carry out a similar test at the industry level. If a comprehensive risk framework was developed then like the prudential risk system it would need an allocation of funds to pay for remediation. But it would also need to have a proactive element similar to the business continuity plans where the scenarios are tested on a regular basis at the industry level.

We are aware of some limitations because the analysis relies on published reports and is at this stage incomplete. However it should be recognized that the bank’s reports are generally reliable sources of information as they are certified either by officers of the bank, public auditors or government regulators. This research contributes to our understanding of the cause and effect of each bank’s decision making strategies in terms of delivery of IT services on the APSI.

In conclusion, the aim of this paper has been achieved: we have demonstrated the complexity and risk of the current IT delivery environment within WBC. We believe this research will form the foundation for future research into the prudential regulatory risk management and governance of IT in the banking industry within Australia. We are contributing to fill the gap in research into the critically important issues surrounding IT sourcing decision making, risk management and governance within the Australian finance industry.

**REFERENCES**


