

Mergers and Acquisitions in Banking: A Framework for Effective IT Integration

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Abstract

This study aims to identify key issues in the information technology (IT) integration in mergers and acquisitions (M&A) in banking and propose an approach to increase the efficiency of such integration. The study produces a first cut IT integration framework based on the literature review into the key factors in IT integration in banking and selected popular IT governance models, such as Control Objectives for Information and related Technology (COBIT), and then refines it with the help of IT practitioners based on their involvement in a number of high-profile banking M&A cases. The proposed framework is thus underpinned by the latest theoretical thinking in the relevant subject field and builds on relevant practical experience. Senior level IT practitioners in banking organisations can employ the framework to inform and guide the execution and post-mortem review of their M&A integration projects.

Keywords: banking, mergers & acquisitions, IT Integration, IT governance, cobit, framework

1. Aims and Objectives

The study aims to expand the knowledge base on the IT integration best practices as applied to the M&A practice in banking. To achieve that, a number of large-scale high-profile banking M&A cases were investigated by interviewing key senior level technology officers directly involved in the delivery of those projects. Some of the results of the study were published in another work, Kovela and Skok (2012), which among other things confirmed that IT is a critical resource and enabler in the business model of modern banking and therefore a clear link between the business strategy driving the merger and the priority of the IT integration tasks which are key for the efficiency of M&A transactions. The current paper builds on and complements these findings by proposing a framework for those embarking on the process. The objectives here are:

- To establish whether the adoption of an IT integration framework is necessary for efficient integration in M&A in banking.
- To survey the landscape of existing IT governance frameworks and identify those that could potentially be used as a basis for the above M&A IT integration framework.
- To create a M&A IT integration framework and then benchmark and adjust it against the practice-based summative profile of the banking M&A IT integration process.

As a result, a generic optimal M&A IT integration framework, henceforth referred to as the “IT integration framework”, would be formulated. The final deliverable of this work will be a theory-based and informed-by-practice IT integration framework for banking M&A.

2. Literature Review

2.1 Why Is Guidance for M&A IT Integration Important in Banking?

Global M&A has been very strong in the past several decades, and today is stronger than ever. According to Thomson Securities Financial Data (as cited in Walter, 2004), 88.3 thousand M&A deals were closed between 1985 and 2002 accounting for \$7.1 trillion in total. This pace slowed down considerably immediately after the world economic crisis of 2008, but recent years have seen strong recovery and growth—the M&A deals totalled \$2.4 trillion, \$2.5 trillion, \$2.6 trillion, \$2.3 trillion, and \$2.7 trillion in 2009, 2010, 2011, 2012, 2013, and 2014 respectively (Reuters, 2014). Banking M&A has been closely trailing the global M&A trends—according to

Deloitte (2014) “(in 2014)... conditions improved versus the preceding two years—more deals were transacted at higher multiples” with “total deal value of \$14.4 billion in 2013, up from \$13 billion in 2012”. That and the fact that the government and self-initiated restructuring that swept the banking industry after the crisis of 2008 (Deloitte, 2014) is still on-going will result in more M&A IT integration projects with their corresponding problems.

There are several IT integration-related factors to consider. Firstly, M&As fail to increase shareholder value in more than half of the cases (58.3% between 1992 and 2006 according to Cools et al, 2007) and in banking specifically that can often be directly attributed to the IT integration related problems (Williams, 2005; Williams et al, 2007; Kovela & Skok, 2012; Deloitte, 2014; The Mergermarket Group, 2014), e.g. the cases of Santander’s takeover of Alliance and Leicester (Williams, 2010) and integration of the RBS Group’s IT infrastructure (King, 2012 and Boyce, 2012). Secondly, no appropriate common-reference M&A IT integration framework for banking institutions exists in the public domain, which means banks at large will be “reinventing the wheel” every time an M&A IT integration is undertaken and often making the same mistakes. Finally, a number of empirical studies (Haspeslagh, 1991; Pliskin et al., 1993; Davis, 2000; King, et al. 2004; Carretta, Farina and Schwizer, 2007) suggest that despite the differences between individual IT integrations a degree of commonality still exists at an industry, business, or business function level, so useful generalisations could still be made with sufficient research data on hand.

Consequently the authors suggest that openly available M&A IT integration guidance for banking could help establish a common knowledge base and create preconditions for improving the success rates in such projects and thus benefit both individual businesses and the industry at large. The question therefore arises—is there any approach, framework or guidance, readily available for that purpose?

2.2 M&A IT Integration in the Context of IT Governance

In 1996, Stylianou et al. (1996) made one of the first attempts to classify the factors playing a role in M&A information system (IS) integration and establish how important they were to the overall success of the transaction. A year later, Giacomazzi et al. (1997) proposed a model for IS integration, linking variables such as corporate objectives and setup of the parties merging with requirements for the target information system (IS) organisation and outlining a range of IS integration scenarios, i.e. total, partial, or no integration. Subsequently Wijnhoven et al. (2006) addressed the post-merger IT integration problem as one of IT alignment (Henderson & Venkatraman, 1992), whereby the strategy for integrating information technology would be inseparable from the overall business integration strategy and so should be handled with strict alignment to the business goals and objectives of the merger. A study by Baker and Niederman (2014) has recently developed the argument by proposing a framework for aligning business and IS strategies throughout the M&A execution cycle. Also, Alaranta and Mathiassen (2014) examined the risk management perspective of the post-merger IS integration and proposed a framework to “prepare for, analyse, and mitigate risks” in order to facilitate such transactions. Finally, and perhaps closest to our needs, in 2011 Maire and Collette presented a more practical guidance for post-merger integration specifically in the financial services scenario (Maire & Collette, 2011), although this too fell short of providing enough technology-level detail on the implementation of the integration process.

There is a clearly visible evolution of thought in the above studies, where the initial recognition of specific features and attributes impacting on the success of the IS integration process is followed by a gradual understanding that these often span beyond the IT function itself and are deeply ingrained in the organisational setup and strategy. Finally the conclusion is drawn that the IT function is as inseparable from the organisation as the IT integration process is inseparable from the overall post-merger integration of the business, and thus has to be treated within the broader context of the organisational and IT governance. Furthermore, there are indications that growing from the recognition of the ubiquity and critical importance of IT, there is a recent trend on the part of large firms to elevate control over IT performance to Board level. For instance, Tyco International, FedEx and JP Morgan Chase are among many Fortune 1000 firms to have recently established corporate-level IT governance councils (Symons, 2005).

The above leads one to assume some attempts would have been made to explicitly apply an IT governance approach to facilitate the M&A IT integration by now. Specifically, knowing from the outset that a robust IT governance framework that already had or could “adopt” an M&A IT integration component did exist would save time re-inventing it. Still, Alaranta (2005) notes that such works are sparse and inconclusive, which supports calls for the matter to be addressed in this study.

2.3 Identifying a Good IT Governance Framework for M&A IT Integration

The known IT governance frameworks can be broadly split into two categories – generic models and specialised

methods /practices: the former attempt to present an all-encompassing view of the domain (e.g. ISO/IEC 38500:2008 (ISO/IEC, 2008) and Control Objectives for Information and related Technology (COBIT) (ITGI, 2007; ISACA, 2012), while the latter deal with specific aspects only (e.g. ITIL (OGC, 2007), CMMI (CMU, 2007), ISO/IEC 27002:2005 (ISO/IEC, 2009), Zachman Framework (Zachman, 2008), TOGAF (TOG, 2009), PRINCE2 (CCTA, 2009), etc.). Recently there have been attempts to classify and arrange this set according to areas of applicability, thus making it easier to select an appropriate generic/specialised framework for a particular need (e.g. the Calder-Moir IT Governance Framework in Calder (2009)), but the task of choosing an IT governance framework for a particular set of processes is still far from trivial due to the peculiarities of one firm's organisational structure and strategy. In our attempts to identify a suitable candidate, we focused on those generic and broad enough to fulfil the IT governance needs of the enterprise, yet provide enough detail to allow for practical implementation of the IT integration process. Broadly speaking, from amongst the above, ISO/IEC 38500:2008 and COBIT come closest. Brief descriptions of the two follow below.

2.3.1 ISO/IEC 38500:2008

According to ISO/IEC (2008) ISO/IEC 38500:2008 is "a high level, principles based advisory standard". In addition to providing broad guidance on the role of a governing body, it encourages organisations to use appropriate standards to underpin their governance of IT and provides a framework of principles for directors to use when evaluating, directing and monitoring the use of IT in their organisations. The standard defines the following principles for "good governance" of IT:

- Establish clearly understood responsibilities for IT;
- Plan IT to best support the organisation;
- Acquire IT validly;
- Ensure that IT performs well;
- Ensure IT conforms with formal rules;
- Ensure IT respects human factors;

Complying with the above principles would assist directors in balancing risks and encouraging opportunities arising from the use of IT, as well as assure conformance with legislation and contractual obligations (ITGI, 2009).

2.3.2 COBIT

COBIT is positioned as a high level framework, that is business requirements-driven, covers the full range of IT activities, and concentrates on "governing and managing enterprise IT" (ISACA, 2012). COBIT's main principles are:

- Meeting Stakeholder Needs;
- Covering the Enterprise End-to-end;
- Applying a Single, Integrated Framework;
- Enabling a Holistic Approach;
- Separating Governance From Management.

Performance measurement goals and metrics are defined at the following levels:

- Enterprise goals and metrics that define what the overall business goals are and how to measure them;
- IT goals and metrics that define how IT would support the above enterprise goals and how to measure it;
- Process goals and metrics that define what IT process must deliver to support the IT goals and how to measure it;
- Activity goals and metrics that establish what needs to happen inside the process to achieve the required performance and how to measure it.

The framework has evolved significantly throughout the time this study was conducted, going from version 4.1 originally published in 2007 (ITGI, 2007) to version 5 in 2012 (ISACA, 2012). There have been a number of changes, the most relevant one being a change in the definition of the Domains of COBIT. Version 5 has separated goals and metrics from the planning and delivery process and widened the scope of the domains by

bringing stakeholders and good practices in the mix; this is reflected by the new name of Enabler Dimensions (see Table 1).

Table 1. COBIT 4.1 vs. COBIT 5-domains vs enabler dimensions

COBIT 4.1: Domains of COBIT	COBIT 5: Enabler Dimensions
Plan and Organise	Stakeholders
Acquire and Implement	Goals and metrics
Deliver and Support	Life cycle
Monitor and Evaluate	Good practices

2.3.3 COBIT vs. ISO/IEC 38500:2008

Whilst ISO/IEC 38500:2008 addresses the IT governance matter only at the Board level, COBIT adopts a much deeper and ultimately more suitable approach for our purposes. Firstly, being aimed at business management, IT management and auditors, COBIT's generic processes provide a common means of communication between different levels of an enterprise's governance hierarchy through the detailed enterprise goals: IT-related goals and IT-related process mapping. Secondly, designed specifically to allow for process transparency and accountability, COBIT readily supports Sarbanes-Oxley Act (USGPO, 2002), its European counterpart Directive 84/253/EEC (EUR-Lex, 1984) and the legislation alike. Thirdly, complemented by a number of mappings onto the policy and implementation level frameworks and standards (ISACA, 2012), COBIT presents a strong and robust guidance for application of the IT governance principles. Last but not least, evolving as an open standard, COBIT is being increasingly adopted as the control model for implementing effective IT governance on a global scale (ITGI, 2009; ISACA, 2012).

2.4 *Is COBIT Sufficient as a Practical M&A IT Integration Framework for Banking?*

Considering the robustness of COBIT and the proliferation of M&As in regulated and IT-dominant environments such as banking, it would seem natural to see COBIT being actively applied. Surprisingly, there is little evidence of the framework being applied either in pre-merger planning or post-merger integration. Alaranta (2005) notes a rather limited number of field reports in this respect (e.g. Pareek (2005), Lambeth (2007), Bhatia (2007), CISP (2009), etc.). The question, therefore, is whether this is caused by general inertia in new theoretical concepts achieving traction in the "real world" or is this due to some limitations in the theoretical approach itself.

There are several considerations regarding the "inertia element". Firstly, since the banking industry is so dependent on IT, relying on proven methods rather than pioneering cutting-edge yet potentially imperfect approaches, seems totally justified. Secondly, there is a plethora of IT governance and project management frameworks around (ITIL, CMMI, PRINCE2, etc.) that perhaps lack all-round coverage, but are well known and are thus cheaper to use. Thirdly, the real incentive for exploring the benefits of COBIT only came about in 2002 with the introduction of the Sarbanes-Oxley Act, at which point regulatory compliance and transparency became imperative. Thus it is only recently that COBIT has been showing signs of becoming a de facto regulatory-compliant IT governance framework standard.

Considerations regarding the "theory limitations" part are two-fold. On the one hand, COBIT is a well-thought through integrated collection of controls spanning all the project planning and delivery phases in the traditional project management sense, but on the other hand the framework does not address the key technology-implementation level issues in the M&A IT integration process, i.e. the consolidation of multiple IT infrastructures into a single one and the types of documents that should accompany the process. COBIT on its own therefore cannot serve as a one-stop solution for our task; to accomplish that it needs some form of implementation-level IT platform integration plan attached to it. It is also worth noting that version 4.1 Domains of COBIT would be the authors' preferred option to be used in constructing such a plan, as the definitions used there are both robust enough for our IT integration process structuring needs and are quite straightforward to use, whilst the version 5 COBIT Generic Enablers have wider scope and are therefore more difficult to apply whilst adding no extra value to addressing the issue at hand. Therefore, to produce a first cut M&A IT integration framework it would be feasible to use COBIT as an overarching enterprise IT management and governance framework with version 4.1 Domains as a basis for structuring the M&A IT integration process, and complement it with the detailed implementation-level banking IT platform integration plan.

3. Research Design

3.1 Method and Techniques

The authors adopt grounded theory as the study method. In line with the definition of “systematic generation of theory from data that contains both inductive and deductive thinking... deriving conceptual profile of the phenomena by employing a systematic set of procedures” (Glaser and Strauss, 1999), we employ techniques such as literature review, interviews, and subsequent analysis with the aim to produce a new process model in the form of an IT integration framework for banking institutions engaging in M&A IT integration projects.

3.2 Data Collection, Selection and Analysis Methods

The secondary research data collection covered over sixty peer-reviewed journal publications and a similar number of industry publications (e.g. white papers, company reports, etc.). This allowed a theory-based version of the M&A IT integration framework to be constructed (see Appendix A). The principles guiding the design of the prospective framework were:

- *Firm alignment between the business and IT goals* – IT strategic and tactical plans; programme, project, and service portfolios, Four Domains of COBIT (ITGI, 2007) as the initial model for defining the integration delivery areas;
- *Aggressive exploitation of technology consolidation-related savings* – business processes, applications, infrastructure, data, vendor contracts, software licensing;
- *Synergy through application rationalisation* – consolidated application platform and data repository, optimal functionality range, support for the new business model;
- *Synergy through process consolidation* – software procurement, service desk operation, security policies;
- *Synergy through common organisation culture and staff retention* – clear staff communications strategy, staff retention incentives aligned with integration needs, cultural integration as a management team priority;

The primary research exercise was in the form of semi-structured two hour-long interviews (see Appendix B) with four senior-executive-rank officials who personally oversaw eight large-scale post-merger IT integration projects from their London headquarters between 1995 and 2010. The banking institutions involved in the above projects were Royal Bank of Scotland, Lloyds, Citigroup, UBS, Nomura, and Deutsche Bank. Major limitations of the approach were recognised to be:

- Imperfect sample reducing the ability to generalise the findings;
- Imperfect interview structure / questions failing to address the complexity of the subject in its entirety;
- Personal bias of the respondents due to their role on the acquiring / acquired side.

To address the above issues the following measures were taken:

- The case selection process strived to produce a sample which was balanced and diverse enough to serve as a fair representation of the IT integration practices in contemporary banking M&As. Table 2 below summarises the case selection aims and criteria;
- Prior to conducting the interviews the question list was critically reviewed by one of the would-be respondents and adjusted according to the corrections proposed. Professional advice was taken to eliminate possible bias of the interviewer and balance the focus evenly between the aspects of the study;
- To ensure the unbiased view of the relevant issues and success an even “acquirer / acquired” split in the interviewees’ roles was sought. In three of the eight cases studied, the interviewees were the acquirers, whilst in the other five, the interviewees were on the acquired side.

Table 2. The case selection aims and criteria

Aim	Criteria / Features
Coverage of a broad spectrum of M&A deals	Good spread in the composition and size of the deals / Some of the cases were mergers between very big similar-size organisations, whilst others were takeovers of a small organisation by a much bigger one
Fair indication of how the M&A IT integration practice in banking might have evolved in recent years	Time perspective / Combined history of the cases spans fifteen years
Relevance and credibility of opinions presented	Every interviewee spent in excess of three years in relevant senior technology management roles in their respective organisations and managed the post-merger IT integration projects. Half of the interviewees managed more than one such project

The interview analysis that followed was a cross-case analysis of four interviews covering eight M&A cases using the constant comparison method (Patton, 1990) to group answers to the questions below:

- Is the IT integration framework a “must have” or a “nice to have” in a banking M&A?
- What are the issues and workarounds in employing such a framework?
- Is the proposed theory-based framework applicable and usable immediately?
- If changes to the framework proposed are required, what are they?

3.3 The Research Process

The literature review phase produced a sense of the importance of the IT integration framework for efficient M&A integration in banking and what the optimal theory-based version of such a framework should look like. The interviews, on the other hand, validated the above findings and supplied insight into the issues and workarounds associated with putting this theory into practice in a commercial environment. The validation was based on real-life practices that have been in place in the banking industry for the past two decades. The results of both exercises were combined to create an “optimal” banking M&A IT integration framework.

4. Summary of the Findings

For confidentiality purposes, interviewees are referred to as C, H, J and T respectively.

The section below presents the summary of findings divided into three areas: a) the perceived need for an M&A IT integration framework in banking, b) issues and workarounds in employing such a framework and c) the proposed revised framework.

4.1 An IT Integration Framework –a “Must Have” or a “Nice to Have”?

Table 3 lists the respondents’ comments that show that despite the differences in perceptions of how an IT integration framework would apply to small and big projects and how formal it should be, everybody agrees that having one is necessary.

Table 3. The need for an IT integration framework

Respondent H	– “The mergers we are talking about are big and you need a level of formality... everybody would see the need of using a framework”
Respondent T	– “We have got the policy; it is there... We’ve got a process for big projects, and a process for small projects... so even if it is small we’ve still got one... because of the standards, everything has to comply at some level”
Respondent J	– “Firms like us absolutely strive to put some governance in place... but in this industry, formal governance frameworks are worth nothing anyway, unless you’re doing something massive... maybe if you’re doing a two / three / four hundred million program to rationalise two enormous data centres between say Deutsche Bank and Banker’s Trust with multi-hundreds of million dollar spends and potentially huge savings, you would need to invest in that sort of thing”
Respondent C	– “The size of the IT integration project does not affect the applicability of formal IT integration frameworks... It just means that the error (and the tolerance) in absolute pounds is obviously much larger. So it is more about the impact; you need the right governance”

4.2 Issues and Workarounds in Employing an IT Integration Framework

With regard to successfully employing an IT integration framework, the respondents have named two areas that tend to generate the majority of issues:

- Imperfections of the framework in use (overly generic/prescriptive, contains gaps, etc.);
- Overly loose interpretation and poor execution of the framework guidelines.

Our research indicates that the first of the above can be successfully addressed by gradually accumulating experience as key staff and organisations themselves engage in an increasing number of projects and use the knowledge acquired to improve the frameworks in use. The other area is more difficult to handle, since it must deal with elements such as motivation and the personal agendas of key staff involved. Positive results can still be achieved by employing organisational measures, such as structuring the enterprise governance so that the IT integration process is managed outside the IT function. As one of the respondents put it, “there was an independent judicial, which sat externally organisationally, but it was part of the overall program. So they had complete transparency, which is a pain in the back when you’re trying to run something... but it was good”. Also, proper enforcement of the guidelines in place would alleviate some of the issues too. Quoting another respondent, “when you are changing things... it is not the time to be making shortcuts, because we really need that company to be connected and that to happen and lets relax a few things – so the answer there is NO... go and do your due diligence!”. Thus, one would conclude that putting the rules in place, sticking to them consistently and improving them over time as one does more work is the way forward.

4.3 Revision of the Proposed Theory-Based IT Integration Framework

4.3.1 Is the Proposed Theory-Based Framework Applicable and Usable Immediately?

All the respondents have agreed that the proposed IT integration framework was a good match for guiding the generic M&A IT integration process, but needed some minor adjustments. Some of the most notable comments were:

- “One methodology never fits all anyway, but if I had this in my hand it would have been a very useful checklist or reference basis and the framework” (Respondent J);
- “The point with this framework is that these aren’t the specific issues but these give a general impression of things you’d have to look at... I would say maybe some sequencing of things, but you probably captured the essential items, you’ve used the words that people use for running the project, and every project is different and every deal is different, but logically there is a flow” (Respondent T);
- “It needs a few minor adjustments, because the key thing to me is – you need absolute clarity on the customer impact” (Respondent C).

When asked whether the proposed framework was an immediate improvement over the company’s existing IT integration process the respondents stated that:

- “If you were starting from scratch, that is a very useful checklist to start with, if you were looking for something that is generalizable, small, and M&A” (Respondent C);
- “It would potentially be an improvement, because it would be just a little bit more structure to the thought process... we did get blind-sided by a couple of things, and this checklist might have stopped that from happening” (Respondent J).
- “Every deal is different, so you’ll not write The Perfect IT Integration Process for all cases. What you’ll write is the things that people will need to consider and then depending on the deal, and then that the deal happens, then that will be appropriate... it is a fair one” (Respondent T).

All in all, the proposed framework was considered a “compact and structured generic reminder for M&A IT integration” – generally applicable, well organised, compact, and particularly useful for new M&A IT integration planning. However, some specific changes were deemed necessary.

4.3.2 Summary of the Changes Suggested

A number of suggestions were made to improve the framework proposed (see Appendix C). These revolved around several themes listed below:

- Business strategy must come before everything else, as an inability to clearly state what business priorities and requirements are is guaranteed to stifle the IT integration process;
- Putting an appropriate management team in place as early as possible is extremely important, as it will

have major implications for staffing and architectural decisions;

- Intellectual Property Rights (IPR) and information security are extremely important, as they underpin most of the banking business, yet are tricky to manage when firms split and merge across jurisdictions.

The complete version of the framework obtained by incorporating the changes suggested is presented in the next section.

4.3.3 The Revised and Complete Banking M&A IT Integration Framework

Stage 1: Plan and Organise

1. Define the business strategy
 - 1.1. “Tactical fixes to get things working together quickly / get strategic later on” vs. “get strategic from the outset”
 - 1.2. What functionality to deliver and when
2. Define the decision-making structure / management team
3. Define the systems integration strategy (preserve vs. absorb vs. best-of-breed on a firm / portfolio / specific element’s basis)
4. Assess the acquirer’s IT readiness for integration
 - 4.1. Governance (centralized vs. federated, standardised vs. unique)
 - (a) Governance and steering committees
 - (b) Project prioritisation and resource planning
 - (c) IT asset and vendor management
 - (d) Operations process
 - 4.2. Architecture (documentation, scalability, connectivity)
 - (a) Applications
 - (b) Data
 - (c) Infrastructure and technology
 - 4.3. Staff skills (currency, renewability)
 - (a) Architecture
 - (b) Application integration
 - (c) Complex project management
5. Perform due diligence of the acquired firm’s IT resources
 - 5.1. Applications
 - (a) Architecture and standards
 - (b) Functionality
 - (c) Technology quality and currency
 - (d) License and support agreements
 - (e) IPR
 - (f) Development / enhancement / acquisition projects
 - 5.2. Infrastructure
 - (a) Architecture and standards
 - (b) Software, hardware, and communications inventory
 - (c) Production, test, and development environments
 - (d) Information, system, and network security
 - (e) Contingency infrastructure
 - (f) Operational policy / procedures (problem management / configuration management / change management)
 - 5.3. Customer service
 - (a) Help desk staff, systems, processes
 - (b) Service level agreements / measurements
 - 5.4. Staff
 - (a) Staffing, skills, retention, and accountability
 - (b) Policies and benefits
 - (c) Cost Structure
6. Compare across organisations how IT roles and responsibilities map out
7. Enable decision on the information architecture
 - 7.1. Commercial and contractual elements
 - (a) Volume agreements

<p>(b) Renegotiation / negotiation of contracts</p> <p>7.2. Total cost of different information architecture configurations (integration budget + TCO of going forward)</p> <p>8. Choose the information architecture and operating model</p> <p>Deliverables / artefacts:</p> <ul style="list-style-type: none"> – Strategic IT plan / tactical IT plans / optimised business systems plan – Technology standards / infrastructure plan – Development standards / acquisition standards – Quality and risk management standards – IT process framework, policies, documented roles and responsibilities – IT skills matrix / job descriptions / IT human resources policy and procedures – Users' skills, training requirements, roles and responsibilities – IT project and service portfolio / IT budget – Information architecture / data classification scheme / data dictionary – IT acquisition strategy and sourcing portfolio <p>Stage 2: Acquire and Implement</p> <ol style="list-style-type: none"> 1. Make key resources available <ol style="list-style-type: none"> 1.1 Costs and budgets <ol style="list-style-type: none"> (a) Synergy-related savings (b) Provisions (investment into ongoing and planned projects vs. immediate integration-related needs) 1.2 Staff <ol style="list-style-type: none"> (a) Structure and retention (b) IT functions (overlap and biased advocacy) (c) Organisational cultures (conflict management) 2. Implement staffing and retention plans 3. Establish basic connectivity / consolidate key aspects of infrastructure 4. Develop integrated solution <ol style="list-style-type: none"> 4.1. Applications <ol style="list-style-type: none"> (a) Target architecture (b) System selection (functionality, capacity, reliability, total cost of ownership) 4.2. Infrastructure <ol style="list-style-type: none"> (a) Target architecture (b) Capacity / IPR (data centres) (c) Connectivity (d) Security 4.3. Regulatory, legal, compliance and audit <ol style="list-style-type: none"> (a) Regulatory approval in relation to the negotiation of contracts (b) Client consents in relation to the negotiation of contracts (c) Documentation for audit purposes (d) Risk acceptance 5. Acquire and maintain application software, hardware, and technology infrastructure 6. Enable operation and use (accreditation and training) 7. Consolidate vendor agreements 8. Define and manage service levels (customers and suppliers) 9. Communicate final organisation, decision processes, and staff options 10. Assess and control integration risks <ol style="list-style-type: none"> 10.1. Compliance with strategic IT plan 10.2. Alignment with information architecture 10.3. Compliance with external requirements 10.4. Systems security 10.5. Information security and access rights 10.6. Continuity of service <p>Deliverables / artefacts:</p> <ul style="list-style-type: none"> – Business requirements feasibility study – Procurement decisions / procured inventory – Initial planned service level agreements / operating level agreements – Contractual arrangements
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<ul style="list-style-type: none"> – Configured system to be tested / installed – Availability, continuity and recovery specification – Change process description / status reports – Post-implementation review – User, operational, support, technical, and administration manuals – Training materials <p>Stage 3: Deliver and Support</p> <ol style="list-style-type: none"> 1. Complete any needed data migrations and system integrations 2. Complete business process and system improvement 3. Manage configuration, performance, capacity, and security 4. Retire redundant systems 5. Educate and train users <p>Deliverables / artefacts:</p> <ul style="list-style-type: none"> – New / updated service requirements – Updated IT service portfolio, SLAs, and OLAs – IT configuration / asset details – Process performance reports – Performance and capacity plan – Incident / disaster plan, roles and responsibilities – Known problems, known errors and workarounds – Service requests / request for change – Backup storage and protection plan – IT security plan and policies – User satisfaction reports <p>Stage 4: Monitor and Evaluate</p> <ol style="list-style-type: none"> 1. Monitor and evaluate performance of the common integrated solution <ol style="list-style-type: none"> 1.1. Effectiveness (relevance, timely delivery, consistency, usability) 1.2. Efficiency (cost of provisioning, productivity measure) 1.3. Availability (data available when required) 1.4. Integrity (accuracy, completeness, validity) 1.5. Confidentiality (data available to authorised users only) 1.6. Compliance (contractual obligations, statutes and regulation) 1.7. Reliability (for financial and compliance reporting) <p>Deliverables / artefacts:</p> <ul style="list-style-type: none"> – Report on effectiveness of IT controls – Expected business outcome of IT-enabled business investments – IT governance and process framework improvements – Historical risk trends and events – Report on compliance of IT activities with external legal and regulatory requirements

4.3.4 Could the IT Integration Framework Be Enhanced Any Further?

When asked about possible further enhancements to the framework the response was “needs adjustment for a particular case” (Respondent T) and “every deal is different and every project is different; so it lists all the vital items here but no one size fits all, so have to adjust accordingly every time” (Respondent H)”. Based on the fact that the proposed M&A IT integration framework had already been revised to incorporate and properly sequence all the essential elements of the generic M&A IT integration process, the enhancements mentioned would likely bias the framework in favour of a particular (class of) M&A deal(s) and thus make it less universally applicable. We therefore conclude that the research has hereby reached its practical limit.

5. Conclusions

There has been a lot of M&A activity in the banking industry in the last decade and it continues to increase. Paired with the fact that modern banking is underpinned, enabled and facilitated by IT, this means that the efficiency of the M&A IT integration is one of the most serious challenges the industry is facing today. To help improve the efficiency of the IT integration in M&A in banking, the authors have created a framework that is generic and robust enough to cover all the aspects of consolidation of two IT platforms coming together, yet

detailed enough to allow practical implementation in a commercial setting.

Literature sources and empirical evidence indicate that since the IT function is deeply ingrained within the organisational setup in banking, IT integration should be addressed in the overall context of IT governance. Therefore a suitable IT governance framework should be used as a foundation of the M&A IT integration framework being created. The authors have surveyed the landscape of IT governance frameworks in use today and established that COBIT was currently best fit for the purpose, as it provided the overarching enterprise IT management and governance context for the IT integration process. Thus COBIT 4.1 Domains were used as a basis for structuring the overall IT integration process and a practice-based implementation-level IT integration plan was added to complement that structure. The banking M&A IT integration framework subsequently created was validated with a balanced selection of leading industry practitioners based on their involvement in a diverse selection of high-profile banking M&A projects. The framework would thus be particularly useful for those at a planning stage of a new banking M&A IT integration project or those conducting a post-mortem review.

References

- Alaranta, M. (2005). Evaluating Success in Post-merger IS Integration: A Case Study. *The Electronic Journal Information Systems Evaluation*, 8(3), 143-150.
- Alaranta, M., Mathiassen, L. (2014). Managing Risks: Post-Merger Integration of Information Systems. *IT Professional*, 16(1), 30-40. <http://dx.doi.org/10.1109/MITP.2013.64>
- Baker, E., & Niederman, F. (2014). Integrating the IS functions after mergers and acquisitions: Analyzing business-IT alignment, *Journal of Strategic Information Systems*, 23(2), 112-127
- Bhatia, M. (2007). IT Merger Due Diligence: A Blueprint. *Information Systems Control Journal*, 3.
- Boyce, L. (2012). *RBS admits Ulster Bank fiasco will not be fixed for all until 'mid-July' as small business owner lifts lid on 'lost £50k' nightmare.* Retrieved from <http://www.thisismoney.co.uk/money/saving/article-2168701/RBS-admits-Ulster-Bank-fiasco-fixed-mid-July.html>
- Calder, A. (2009) *The Calder-Moir IT Governance Framework.* Retrieved from http://www.itgovernance.co.uk/calder_moir.aspx
- Carretta, A., Farina, V., & Schwizer, P. (2007) M&A and post merger integration in banking industry: the missing link of corporate culture. In *XVI International Tor Vergata Conference on Banking and Finance*. Retrieved from <http://ssrn.com/abstract=1343667>
- CCTA. (2009). *What is Prince2?* The Central Computer and Telecommunications Agency. Retrieved from <http://www.prince2.com/what-is-prince2.asp>
- CISP. (2009). *IT Due Diligence (M&A), Centre for Information and Social Programs.* Retrieved from <http://www.cisp.org.ua/cisp/news.nsf/4808ef68fa66e9afc22575650041747a/9412f5b1c4109a11c22575c90051875d?OpenDocument>
- CMU. (2007). *Capability Maturity Model Integration (CMMI) Version 1.2 Overview, Carnegie Mellon University.* Retrieved from <http://www.sei.cmu.edu/library/assets/cmmi-overview071.pdf>
- Cools, K. et al. (2007). *The Brave New World of M&A. How to Create Value from Mergers and Acquisitions.* The Boston Consulting Group. Retrieved from http://giddy.org/appliedfinance/ufkl/Brave_New_World_MA_Aug_2007.pdf
- Davis, S. (2000). *Bank Mergers: Lessons for the Future.* New York, St. Martin's Press.
- Deloitte. (2014). *Top 10 Issues for Banking M&A in 2014: Searching for growth and scale.* Retrieved from http://deloitte.wsj.com/riskandcompliance/files/2014/08/MA_banking_topissues.pdf
- EUR-Lex. (1984). *Eighth Council Directive 84/253/EEC of 10 April 1984 based on Article 54 (3) (g) of the Treaty on the approval of persons responsible for carrying out the statutory audits of accounting documents, EUR-Lex.* Retrieved from <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:31984L0253:en:NOT>
- Giacomazzi, F., Panella, C., Pernici, B., Sansoni, M. (1997). Information systems integration in mergers and acquisitions: A normative model. *Information & Management*, 32(6), 289-302. [http://dx.doi.org/10.1016/S0378-7206\(97\)00031-1](http://dx.doi.org/10.1016/S0378-7206(97)00031-1)
- Glaser, B., & Strauss, A. (1999). *The Discovery of Grounded Theory: Strategies for Qualitative Research.* Aldine

- Publishing Company, ISBN 0202302601
- Haspeslagh, P. (1991). *Managing Acquisitions*. New York, Free Press
- Henderson, J., & Venkatraman, N. (1992). Strategic alignment: a model for organizational transformation through information technology. In Kochan, T., Useem, M. (Eds.), *Transforming Organizations* (pp. 97-117). Oxford University Press, New York,
- ISACA. (2012). *COBIT 5: A Business Framework for the Governance and Management of Enterprise IT*, ISACA. Retrieved from <http://www.isaca.org>
- ISO/IEC. (2008). International Standard ISO/IEC 38500:2008 Corporate governance of information technology, ISO/IEC, Geneva.
- ISO/IEC. (2009). ISO/IEC 27002:2005 Information technology – Security techniques–Code of Practice for Information Security Management, ISO27001 Security. Retrieved from <http://www.iso27001security.com/html/27002.html>
- ITGI. (2008). *Aligning CobiT 4.1, ITIL V3 and ISO/IEC 27002 for Business Benefit*. IT Governance Institute
- ITGI. (2007). Control Objectives for Information and related Technology 4.1, IT Governance Institute.
- ITGI. (2009). *ITGI Enables ISO/IEC 38500:2008 Adoption*. IT Governance Institute.
- King, D. et al. (2004). Meta-analyses of Post-acquisition Performance: Indications of Unidentified Moderators, *Strategic Management Journal*, 25(2), 187-200.
- King, M. (2012). RBS IT fallout: Ulster Bank customers still without account access. *The Guardian*. Retrieved from <http://www.guardian.co.uk/money/2012/jul/02/rbs-it-ulster-bank-customers-without-access>
- Kovela, S., & Skok, W. (2012). Mergers and acquisitions in banking: understanding the IT integration perspective. *International Journal of Business and Management*, 7(18), 69-81. <http://dx.doi.org/10.5539/ijbm.v7n18p69>
- Lambeth, J. (2007). Using CobiT as a Tool to Lead Enterprise IT Organizations. *Information Systems Control Journal*, 1.
- Maire, S., & Colletette, P. (2011). International post-merger integration: Lessons from an integration project in the private banking sector. *International Journal of Project Management*, 29(3), 279-294. <http://dx.doi.org/10.1016/j.ijproman.2010.03.001>
- OGC. (2007). The Introduction to the ITIL Service Lifecycle.
- Office of Pareek, M. (2005). IT Governance and Post-merger Systems Integration. *Information Systems Control Journal*, 2.
- Patton, M. (1990). *Qualitative Evaluation and Research Methods* (2nd ed.). Sage Publication.
- Pliskin, N., & Romm, T. (1993). Presumed Versus Actual Organizational Culture: Managerial Implications for Implementation of Information Systems, *The Computer Journal*, 36(2), 143-152. <http://dx.doi.org/10.1093/comjnl/36.2.143>
- Reuters. (2013). *Global M&A activity has best annual start for 2 years*. Retrieved from <http://www.reuters.com/article/2013/03/01/deals-data-idUSL6N0BTC8G20130301>
- Reuters. (2014). *Outlook for Investment Banking Services 2014*. Retrieved from <http://share.thomsonreuters.com/PR/IB/2014OutlookforIBServices.pdf>
- Stylianou, M. et al. (1996). Corporate Mergers and the Problem of IS Integration. *Information & Management*, 31.
- Symons, C. (2005). IT Governance Framework. *Forrester Research*.
- The Mergermarket Group. (2014). *Developing Best Practices: Post-Merger Integration*. Retrieved from http://mergermarketgroup.com/wp-content/uploads/2014/11/TP_Newsletter_Post-Merger_Integration_Final_1.pdf
- TOG. (2009). *The Open Group Architecture Framework*. The Open Group.
- USGPO. (2002). *Sarbanes-Oxley Act of 2002, United States Government Printing Office*. Retrieved from <http://www.gpo.gov/fdsys/pkg/PLAW-107publ204/content-detail.html>
- Walter, I. (2004). *Mergers and acquisitions in banking and finance: what works, what fails, and why*. Oxford

University Press.

- Wijnhoven, P., Spil, T., Stegwee, R., & Tjang, R. (2006). Post-merger IT integration strategies: An IT alignment perspective, *The Journal of Strategic Information Systems*, 15(1), 5-28. <http://dx.doi.org/10.1016/j.jsis.2005.07.002>
- Williams, J. (2010). Santander migration glitch affects Alliance & Leicester customers. *Computer Weekly*. Retrieved from <http://www.computerweekly.com/Articles/2010/08/12/242370/Santander-migration-glitch-affects-Alliance-amp-Leicester.htm>
- Williams, P., et al. (2007). IT and Shareholder Return: Creating Value in the Insurance Industry. *Information Systems Control Journal*, 4, 1-5
- Williams, T. (2005). *Why Bank M&A Is Complex*. PricewaterhouseCoopers Transaction Services. Retrieved from <http://www.financetech.com/news/showArticle.jhtml?articleID=159900287>
- Zachman, A. (2008). *John Zachman's Concise Definition of the Enterprise Framework*. Zachman International. Retrieved from <http://old.zachmaninternational.com/concise%20definition.pdf>

Appendices

Appendix A. M&A IT integration framework—theory-based, compact version

<p>Stage 1: Plan and Organise</p> <ol style="list-style-type: none"> 1.1 Assess the acquirer's IT readiness for integration 1.2 Perform due diligence of the acquired firm's IT resources 1.3 Define the information architecture and the systems integration strategy (preservation vs. absorption vs. "best-of-both-worlds") 1.4 Choose operating model (e.g. in-source vs. outsource) 1.5 Define the decision-making structure and the management team, make key resources available <p>Stage 2: Acquire and Implement</p> <ol style="list-style-type: none"> 1.1 Develop a common integrated solution 1.2 Acquire and maintain application software, hardware, and technology infrastructure 1.3 Enable operation and use (accreditation and training) 1.4 Establish basic connectivity and consolidate key aspects of infrastructure 1.5 Implement staffing and retention plans 1.6 Consolidate vendor agreements 1.7 Define and manage service levels (customers and suppliers) 1.8 Communicate final organisation, decision processes, and staff options 1.9 Assess and control integration risks <p>Stage 3: Deliver and Support</p> <ol style="list-style-type: none"> 3.1 Complete any needed data migrations and system integrations 3.2 Complete business process and system improvement 3.3 Manage configuration, performance, capacity, and security 3.4 Retire redundant systems 3.5 Educate and train users <p>Stage 4: Monitor and Evaluate</p> <ol style="list-style-type: none"> 4.1 Monitor and evaluate performance of the common integrated solution
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Appendix b. the interview questionnaire—a revised version

<ol style="list-style-type: none"> 1 Please rate in order of significance the type of gains expected to be achieved in the merger: <ol style="list-style-type: none"> a) Commercial advantage b) Specific new IT-related advantage c) Survival d) Other 2 Which types of gains were actually achieved in the project? <ol style="list-style-type: none"> a) Commercial advantage (e.g. increased market share, new product or service development opportunities, etc.) b) Survival (e.g. greater stability of the business, government support)

- c) Specific new IT-related advantage (e.g. technology to support new business models, savings through automation, skilled workforce from the acquired business, etc.)
 - d) A combination of the above
- 3 Specifically with regard to the IT-related gains, were they:
 - a) A major element of the projected M&A gains
 - b) A collateral
 - c) Of no significant importance
 - d) Other
- 4 Which of the following could be used to describe the IT integration planning process?
 - a) Clear understanding of the new firm's business priorities and how these translated into the IT integration targets and activities
 - b) Relevant IT staff involved from day one
 - c) Detailed IT evaluation and integration plan BEFORE the deal was agreed in principle
 - d) The staff involved had prior experience in similar projects
- 5 In your view, how did the presence of the above elements (or the lack thereof) affect the planning process?
- 6 Which of the following constraints were imposed on the IT integration process?
 - a) Limited cost and duration
 - b) Challenging demands to functionality of the combined system
 - c) Limited choice of hardware / software (OS / applications) platforms
 - d) Other
- 7 How did the above constraints affect the planning process?
- 8 Other interviewees have indicated that often the IT integration is actually a 2-project process:
 - 1st project being a quick bolting together of systems of the two firms to provide business-critical functionality and basic connectivity;
 - 2nd project being a much slower and thorough consolidation of the IT assets, which may take years after the merger has been officially declared a success.

Do you support this view?
- 9 Which of the following could be used to describe the degree of cooperation at the top management level in the IT integration process?
 - a) CEO / CIO actively cooperating and using same performance assessment metrics
 - b) CEO / CIO actively cooperating, but using different performance assessment metrics
 - c) Little cooperation taking place
 - d) Other
- 10 Generally speaking, what were the reasons for the above level of cooperation?
- 11 Can you recall any cases where a non-technical issue would cause a technical challenge for the IT integration team or vice versa, and how the situation was resolved?
- 12 If there were a renegotiation of IT vendor contracts, how did it affect the IT integration process in terms of time, complexity and cost?
- 13 In your view, how did the time constraints on making a general decision about the deal affect the IT integration and what was the management leadership role here?
- 14 How critical is selection of the optimal management team to drive the IT integration and what are the problem spots here?
- 15 Which of the following could be used to describe the results of the IT integration?
 - a) Completed on time, within budget, required functionality fully implemented
 - b) Cost overheads incurred / schedule slipped / functionality not fully implemented, but within acceptable limits
 - c) Problems with IT integration adversely effected "business as usual"; deemed a failure
 - d) Changed circumstances rendered the results irrelevant (e.g. technology moved on, so the solution was no longer in advance of competition; system requirements have changed; etc.)
 - e) Other
- 16 What, in your view, were the most positive and most negative factors that determined the success / failure of the process?
- 17 In your opinion, does the size of the IT integration project affect the applicability of formal IT integration frameworks?
- 18 Which of the following options characterise the formality of approach to IT governance in the acquiring company?
 - a) Informal, based on practical experience

	b) Formal IT governance framework (ITIL, ISO/IEC 38500:2008, COBIT, etc.)
	c) Formal IT governance with explicit support for legislation (e.g. Sarbanes-Oxley Act, 8th Company Law Directive, etc.)
	d) Other
19	If there is a formal IT governance framework in place, is it aligned with the enterprise governance process? How is this alignment manifested?
20	Which of the elements of formal Quality Assurance process as applied to IT integration are in place in the acquiring company?
	a) IT configuration management
	b) Process review and audit
	c) Staff training guidelines
	d) Other
21	In your opinion, are there any issues with the IT integration that the QA / IT governance process currently in place failed to resolve?
22	In your view, how does the proposed IT integration roadmap (Interview appendix) reflect the optimal IT integration process for this merger?
	a) An ideal match
	b) Needs a few minor adjustments
	c) Inadequate, requires major overhaul
	d) Misses the point completely
23	Is the above IT integration roadmap an improvement over the company's existing IT integration process, and in what way?
24	What other improvements might you suggest?
25	What limitations might this enhanced roadmap still have?

Appendix C. Correction suggested for the theory-based framework

A résumé of the suggestions to the originally proposed framework is presented below:

Respondent C	– “It is very technically focused, and you need to make sure that you've got business, you need to somehow make the linkages to the business strategy and the business stakeholders, and ultimately it is traced through to the customer”
Respondent J	– “Before you even start – assess who the key players are and what would the management team look like. I would look into that before you advocate doing the deal and then how do you implement the organisational change, and that organisational change at the senior level needs to start from the top down” – “At some point you need to consciously take the decision as to your strategy for your implementation – “do we deliberately concentrate all our resources on delivering tactical fixes over the next year just to get the thing working, and then get strategic later on, or do we get strategic now?” – you've got to define the strategy... and then that strategy needs to be agreed at very senior level... And then you have to choose the operating model” – “What you haven't mentioned is the organisation – ...if one bank is working with more integrated model and the other bank is quite segregated... the hierarchy, the logical reporting lines, and the accountability... if you want to get to a certain level of best practice in your target organisation, you've got a lot of educational and organisational change to do – you compare across organisations, how roles and responsibilities are segregated, and how they map out” – “You should add IPR in the due diligence / applications section” – “Common integrated solution / applications – the system selection can sometimes be influenced by the skills that you have and the amount of documentation and tacit knowledge in your team” – “Common integrated solution / infrastructure – data and IPR is big here, especially if data centre will be located in a different jurisdiction”
Respondent T	– “Clearly Stage 0 would be to know what your business strategy is for this target. What you have at Stage 0, without a doubt, is business – get your acquiring business to describe their strategy, because that will steer everything thereafter”

	<ul style="list-style-type: none"> - “Due diligence / infrastructure – add to that a “contingency infrastructure” in c). And I would also be asking about the issues they’ve got there” - Define the systems integration strategy – put that at the top, point 0.5 perhaps – it is about not making a mistake of diving into the detail without understanding whether it is important to the business” - “Define the information architecture of the combined unit – you might not be able to do that pre-deal. You might get it, you might not... let’s say it is not all set in stone by that moment just yet. More realistically, you might just be able to sum up with a crude estimate of how much certain different configurations might cost” - “Choose operating model – again, you probably are not going to be able to choose the operating model pre-deal, it is not going to be decided by then” - “Common integrated solution – costs and budgets must always go first... staff should come straight after costs and budgets. In your cost and budget you’ve got your synergies... and a load of that synergy is going to be staff... You are also going to have some sort of a retention arrangement for some key staff.... implementing staffing and retention plans should follow that too” - “Common integrated solution / regulatory approval – if in regards to the IT side, you are unlikely to have an IT regulatory approval requirement; that is outside of IT” - “Common integrated solution / commercial and contractual elements – needs to come much earlier on, often you are supposed to have either obtained from the vendors or at least properly in the process of having asked for it before you define the information architecture... this should go before the new 1.3 “Define the information architecture” - “Establish basic connectivity and consolidate key aspects of infrastructure – put basic connectivity in the beginning, as discussed before” - “Assess and control integration risks – you need to write “Information security” alone. It is the new safe as far as a bank is concerned or like a lock on the door these days”
Respondent H	<ul style="list-style-type: none"> - “This (framework, ed.) is quite detailed, so what this basically says is that you should do this stuff, so that you’re informed to do this, and the question is whether you do this or you actually do that or that you take a macro decision based on my picture (the vertical model diagram, ed.)” - “You don’t really have anything here about cost, so you don’t have anything that is informing your decision about the total cost of ownership (TCO, ed.) of the platform that you are going to choose... the integration budget... and your TCO of going forward. So I have always thought that you should have something here that actually informs that” - “The regulatory approval and client consents are important specifically in relation to the negotiation of contracts” - “Assess and control integration risks – Information security, access rights, all those things are painful... this must be included separately in the “1.14 Assess and control integration risks” section”

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