Abstract

As a consequence of explosive growth in the amount of information generated, stored, accessed, and used by organizations, the concept of Information Governance (IG) is becoming important in the information systems management profession. The paper focuses on information governance in the banking industry. It involves a study of thirteen banks in three countries, all with highly developed financial systems: Brazil, Hong Kong (SAR of China) and the United States. In addition to reporting on the perceived need for IG in today’s banks, the study proposes and verifies the possibilities of an information governance framework (IGF) with banking industry executives.

1. Introduction

The rapid evolution of information technology (IT) and its application to business is causing major changes in organizations. Information is being created and is multiplying with an amazing speed, due to the facilities offered by IT tools. The amount of information available in the world has grown rapidly. In 2005, mankind created 150 exabytes (an exabyte is a billion gigabytes) of data, and in 2010 the number was estimated to be 1,200 exabytes [52]. People in organizations are beginning to realize that they are overloaded with information.

Over a decade ago Tom Davenport [11] observed: "Our fascination with technology has made us forget the main purpose of the information: to inform". It seems clear that the field of IT is still being dominated by the 'T' (Technology). Cortada [10] states that the annual expenditure on IT, globally, is nearly of four trillion dollars. About half of it goes explicitly to the digital infrastructure of organizations. In a world controlled by a sense of objectivity and technological artifacts, it is common to find the misconception that information is a product of technology. The information, in essence, is the result of subjective interpretation of objective facts [8].

At the same time, Internet and other technological innovations have increased the speed with which business operations are conducted. For instance, according to statistics from Internet World Stats [25] the number of users on internet grew from 361 million people in December 2000 to 2.267 billion in December 2011. The business world is moving at a much faster pace. Consequently, the managers and their teams are increasingly under pressure to meet tighter deadlines and make decisions faster. Because of this, they need reliable information that needs to be delivered to them with greater speed. The technology has been the focus of information management initiatives for some time, but companies are starting to realize that the full value of information depends in large part on the policies and procedures that govern and control their use, access, analysis, retention and protection.

This research focuses on an emerging concept in the field of governance, Information Governance (IG). This emergence of information governance is a response to the inadequacy of IT governance with respect to the increasing importance of information in modern organizations [29]. This paper presents the preliminary results of a research conducted in a highly dynamic and information intensive industry, that is, banking. Soares [46], observes that information governance is critical to banks as banks are becoming more customer-centric across retail, corporate, and institutional banking. To make the study broader and applicable to a global set of banking practices, banks in Brazil, Hong Kong and the United States was studied.

Banking industry has undergone major transformations in recent times. Report from The Banker [53] magazine stated that the credit crisis of 2008 provoked a wave of litigation and forced banks to reveal large amounts of information. This report stated that “banks must begin to put its (their) house in order and rethink their processes for managing information”. According to The Economist [51], the ability of a corporation to handle information depends
on a variety of factors, including executives involved and a business culture that supports collective ownership of information.

Besides showing the relevance of information governance for banks, our research also proposes an information governance framework (IGF). An IGF constitutes a set of factors, all of them directly or indirectly linked to information. This IGF was built after a long search in the literature which allowed the identification of some theoretical elements which guided the authors to the selection of the factors. The validity of the research model was revived by two IT scholars and for bank executive-practitioners.

Its development of IGF started with the identification of the two subjects of study: information and governance. Information as a firm resource was conceptualized unis Resource Based View (RBV) theory while use of Dynamic Capabilities theory was used to reflect the dynamism of the banking industry. Agency theory was used for conceptualizing governance.

Initial findings indicated that in the beginning of the big data era, there was a lack in the governance of information in most banking organizations. This finding led to the main research question: What factors should be considered by banks in an information governance framework? A second related question was “how an Information Governance Framework (IGF) can help implement an IG program in banks”.

2. Prior literature on information governance

This section begins by recognizing the differences between data, information and knowledge [58]. Data is a set of symbols representing perceptions or empirical raw material. Information is a set of symbols representing empirical knowledge, it incorporates assignment of meanings. Knowledge is a set of symbols representing thoughts (objectivist view) or results of a human cognitive process, which involves perception, learning, association and reasoning (subjectivist view).

In the IT field is very common the use of data and information as synonyms. Some authors use the term data governance instead of information governance. However, in this work we adopt the term information governance. It is consistent with the conceptual difference between data and information as shown in the definitions presented above.

The emergence of information governance (IG) as a new concept in the field is recognized by Van Grembergen and Haes [56]. In their book they present the Maes’s [32] model of alignment between business and IT (a further evolution of the model of Henderson and Ventkaraman was published in 1993). In the Maes’s model, a 3 X 3 matrix, the central vertical axis represents information/communication. According to these authors, the split of the IT domain results from the observation that most information and communication process are IT independent. That is why they distinguish between concepts of IT governance and information governance. Indeed, information governance addresses the increasing importance of information in this beginning of the big data era, thus fulfilling a space not well completed by IT governance.

Weill and Ross [57], conceptualize IT governance as the decision rights and accountability framework for encouraging desirable behaviors in the use of IT. Based on this broader definition it can be argued in a first look that information governance is included in the IT governance domain. Before answering let’s take a look on information governance.

According to Kooper et al. [30], the concept of information governance was introduced by Donaldson and Walker [14] as a framework to support the work at the National Health Society on security and confidentiality arrangements to be applied at multiple levels in electronic information services. In our literature review we found some definitions to information governance. Two of them are presented here as follows. Soares [46] states “information governance is the formulation of policy to optimize, secure, and leverage information as an enterprise asset by aligning the objectives of multiple functions”. Kooper et al. [30] argue that information governance “involves establishing an environment of opportunities, rules and decision making rights for the valuation, creation, collection, analysis, distribution, storage, use and control of information”.

There are two important aspects to note about IG. First, Information governance includes data governance. The reason to use “information” instead of “data” is because the former is wider and involves structured and unstructured data which means the use of files and databases, but also emails, video, all kinds of electronic documents and paper documents [46]. Second, the policies and processes for data capture and production, and its access and mainly its use are key aspects of governance.

In summary, information governance the focus is on information, and is different from IT governance approaches where there is a bias on technology aspects. The decision about who (IT area or other) will conduct the implementation of an information governance program is a strategic decision of each company.

3. Theoretical model and the IGF setting
We developed the theoretical foundation for this work based upon three theories: Agency theory, Resource-Based View of the Firm (RBV) and Dynamic Capabilities. Based upon these foundations our theoretical model is shown in Figure 1.

The aspects related to governance are based on elements of Agency theory. The Resource Based View (RBV) and the Dynamic Capabilities of the firm were used to derive the information approach. The three theories belong to economic approach to organizational theories. They provide complementary elements that were selected to help in the creation of an Information Governance Framework for banks.

The use of Agency theory in studies of governance is common in organizational studies [2], [15], [47], and provides a useful way to explain the relationships between principal and agent. Key elements of Agency theory: control, monitoring, risk, rules, alignment and structure were used to describe governance subject [13], [15], [17], [42], [47]. These theoretical elements related to governance aspects were used to identify the IGF factors as will be shown in the following discussion. However, these factors they are not sufficient to assemble a comprehensive framework of information governance, as the framework also needs to deal with elements related to information.

Complementing the governance perspective from Agency theory, the theory of Resource-Based View of the Firm (RBV) addresses firm's competitive advantage and explains how to achieve and maintain it over time [4-5], [50]. The theory also shows that the differences of performance among firms are due to differences between their resources and capabilities, that have value and are able to generate income and cannot be easily copied [4-5], [20]. Information is an intangible resource of great value for banks. It allows the development of internal capabilities that can be used to absorb and leverage their gains from the utilization of resources. The following theoretical elements from RBV were used to identify additional factors for the IGF: heterogeneous resources, information as an asset (resource), performance, quality, information systems (IS) and value [4-5], [15], [20], [26], [33], [45].

Dynamic Capabilities theory is considered an extension of RBV [49], [50], but distinguished in how competitive advantage is derived from these resources. For RBV, competitive advantage arises from the possession of resources that are valuable, rare, not imitable and difficult to replace. In the theory of Dynamic Capabilities, the advantage arises not only from the possession of resources, but also in the capability to reconfigure them in an environment of rapid changes.

Therefore, completing the theoretical framework, Dynamic Capabilities adds the concepts of flexibility, adaptability, integration and reconfiguration. These characteristics are especially significant for an Information Governance Framework for the banking industry. Banks operate in a very competitive environment which is constantly subject to rapid changes. Consequently banks need to invest large sums of money in IT in order to sense and respond to these rapid fluctuations. Thus, the Dynamic Capabilities theory was used to complement the list of theoretical elements with: rapid change, skills, context, learning, knowledge and capabilities [21], [27], [31], [38], [41], [48], [50].

The proposed information governance framework (IGF) consists of dimensions and factors. Dimensions are the first level of the framework and they are a grouping of a set of interconnected factors. Factors are the second level of the framework and they identify the issues that should be addressed by a company to implement an IG strategy. Factors are implemented by policies, practices and actions.

The first step in assembling the IGF was identifying and defining the dimensions of the framework. After a literature search including the recent definitions of IG, we decided to use the ideas presented by Hohman [22] and Samuelson [43] in developing our first level dimensions of the framework. Hohman proposes three dimensions for an IG program: process, people and tools, while Samuelson identifies a information governance framework with four dimensions: people, policy, technology and risk management. As risk management can be integrated in the other three dimensions (that is, people, processes, and technology, all carry certain risks, and can at the same time be used to manage or mitigate those risks), we chose a framework with three dimensions: people, policies and technology.

The second step in developing the IGF involved the use of theoretical elements (concepts) extracted from the three theories presented earlier. Using those elements a new search was done in the literature trying to identify the IG factors in the banking industry that could be related to theoretical elements selected, and
linking them with the dimensions proposed in the framework.

Starting from those eighteen theoretical elements, control, monitoring, risk, rules, alignment, structure, heterogeneous resources, information as an asset, performance, quality, systems, value, rapid change, skills, learning, knowledge, capabilities and context, we identified the following twenty factors for the IGF: accountability, security, monitoring, compliance, retention, accessibility, ethics, privacy, communication, sharing, transparency, formal structure, consumerization, standardization, mobility, quality, systems, value, culture and context. All these factors were associated by researchers to one of the three dimensions as shown on Table 1, and proceeding this way the IGF was formatted.

Table 1. Theories, factors and dimensions

<table>
<thead>
<tr>
<th>Theory</th>
<th>Theoretical Elements</th>
<th>IGF Factor</th>
<th>IGF Dimension</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agency</td>
<td>Control, performance</td>
<td>Accountability</td>
<td>Smallest</td>
</tr>
<tr>
<td>Agency</td>
<td>Monitoring, risk</td>
<td>Security</td>
<td>Middle</td>
</tr>
<tr>
<td>Agency</td>
<td>Rules, structure</td>
<td>Compliance</td>
<td>Biggest</td>
</tr>
<tr>
<td>Agency</td>
<td>Alignment, sharing</td>
<td>Communication</td>
<td>Middle</td>
</tr>
<tr>
<td>Agency</td>
<td>Performance, quality</td>
<td>Systems</td>
<td>Smallest</td>
</tr>
<tr>
<td>HRV</td>
<td>Heterogeneous resources, information</td>
<td>Value</td>
<td>Middle</td>
</tr>
<tr>
<td>DC</td>
<td>Change, Skills, Learning, Knowledge</td>
<td>Culture</td>
<td>Smallest</td>
</tr>
</tbody>
</table>

Some theoretical elements represent directly the factor as can be seen in the cases of monitoring, structure, quality, systems, value and context. Others were determined by the researchers following the findings in the search, as for example, in the assignment of factors compliance and retention to the element risk.

4. The research model and the hypotheses

Prior discussion answered the proposed research question “What factors should be considered by banks in an information governance framework?” The research model derived from this analysis is summarized in Figure 2.

![Figure 2. Research model](image)

This research model represents the proposed information governance framework (IGF) and consists of three dimensions and twenty factors. The first dimension, People, includes factors such as context, culture and ethics. The second dimension, policies, represents the central part of the model, and has the following factors: accessibility, accountability, communication, compliance, formal structure, monitoring, privacy, quality, retention, security, sharing, standardization, transparency and value. The third and final dimension is technology that is composed of three factors: consumerization, mobility and systems. Table 2 presents all IGF dimensions and factors with a brief description of them.

<table>
<thead>
<tr>
<th>Table 2. IGF dimensions and factors description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Factor</td>
</tr>
<tr>
<td>-------</td>
</tr>
<tr>
<td>Accountability</td>
</tr>
<tr>
<td>Access</td>
</tr>
<tr>
<td>Security</td>
</tr>
<tr>
<td>Communication</td>
</tr>
<tr>
<td>Compliance</td>
</tr>
<tr>
<td>Mobility</td>
</tr>
<tr>
<td>Consumerization</td>
</tr>
<tr>
<td>Standardization</td>
</tr>
<tr>
<td>Systems</td>
</tr>
</tbody>
</table>

Based upon these dimensions and factors, three researchable hypotheses were formulated:

1. Hypothesis 1: Information Governance (IG) is nowadays a great value subject for banks. It’s the first and basic step of the research. To discover if IG is a relevant subject for banks is basic for the study, it is a pre-condition to the other questions proposed for the work. It is also mandatory to discover why IG subject is important for banks, what they can expect from it, and mainly why they should put money on it;
2. Hypothesis 2: IG may be implemented in banks through an Information Governance Framework (IGF). In a sequence is necessary to verify if an IGF is required or even enough to implement an IG program inside a bank. To check it, a proposed IGF composed by dimensions and factors was presented to a selected group of bank executives; and

3. Hypothesis 3: An IGF to be implemented in banks should consider multiple dimensions and factors in order to deal with the dynamic banking industry. The last hypothesis addresses an apparently outstanding characteristic of the banking industry, its dynamism. For the research is mandatory to check if banking industry is really dynamic and, if so, the IGF should consider multiple aspects of information and governance to be able to deal with this issue inside a bank.

5. Methodology

The method used was multiple case studies [57] and the protocol was replicated all cases [40]. The unit of analysis is the financial institution where the executive interviewed works. In addition to interviews, data were collected from documents on institution websites, from documents delivered or showed by the interviewees to the researcher and additionally from articles in trade magazine publications. The research was conducted with the support of computer assisted qualitative data analysis software (CAQDAS), NVivo version 9, from QSR Software.

5.1 Research context

The research considered three sets of banks in three different countries: Brazil, the United States and China, (or more specifically, in Hong Kong, a Special Administrative Region (SAR) of People’s Republic of China). Sixteen interviews with high executives of thirteen different banks in three countries were conducted. The strategy provides a broader vision of IG current practices in banks. The executives in the study include global CIO’s, IT directors, managing directors. For confidentiality reasons their names banks are not given and will be referred using the acronyms BRA for banks in Brazil, USA for banks in the United States and HKG for banks in Hong Kong, always followed by a sequential number.

The choice of the three countries was done because their importance in local, regional, or global markets. Brazil, one of the BRICS countries, is an important center in Latin America. Hong Kong is a major financial center in Asia and is also, at the same time is highly integrated with banks in the United Kingdom and Europe. Finally United States is the preeminent global power, and its banking system is included in the study for its presence and influence in the international markets. Three big Europeans banks are included in the selected sample, and it is important to highlight that among the thirteen banks there are four included in the list of the ten bigger banks in the world published by The Banker in 2011.

5.2 Interviews and documents

The script for the interviews is based on the proposed IGF, and was previously tested with the accomplishment of four pilot interviews with bankers in Brazil. After going through improvements and simplifications the final model was presented to two scholars, one in Brazil and one in the USA. Only after these validation phases, the script was applied in executive interviews. The instrument is a semi-structured questionnaire composed basically by questions about each IGF factor. Some additional questions concerned to topics like dynamism of the banking industry or related to the relevance of IG subject complete the script.

The interviews were carried out between October 2011 and March 2012 in the cities of Brasilia, Sào Paulo (via Skype), New York, Fort Lauderdale and Hong Kong. All interviews were recorded with the express consent of the interviewees, and their contents transcribed and analyzed by authors using NVivo. Table 3 shows the list of interviewed executives and some additional data of the conducted interviews.

The executive’s names were coded due to confidentiality commitment. Sixteen high executives of banks were interviewed, five in Brazil, five in Hong Kong and six in the United States. All interviewees are male and occupy high positions in their organizations. The languages used were Portuguese and English. The transcriptions from English interviews were checked by a second reviewer. All transcriptions were done in their original languages.

<table>
<thead>
<tr>
<th>No.</th>
<th>Position</th>
<th>Date</th>
<th>City</th>
<th>Time</th>
<th>Recording</th>
<th>Notes</th>
<th>Country of origin</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Director</td>
<td>05/2011</td>
<td>Brazil</td>
<td>02:23</td>
<td>Brazil</td>
<td></td>
<td>Brazil</td>
</tr>
<tr>
<td>2</td>
<td>Executive Director</td>
<td>06/2011</td>
<td>USA</td>
<td>01:45</td>
<td>USA</td>
<td></td>
<td>USA</td>
</tr>
<tr>
<td>3</td>
<td>Managing Director</td>
<td>06/2011</td>
<td>Hong Kong</td>
<td>03:10</td>
<td>HKG</td>
<td></td>
<td>Hong Kong</td>
</tr>
<tr>
<td>4</td>
<td>CIO</td>
<td>09/2011</td>
<td>USA</td>
<td>02:00</td>
<td>USA</td>
<td></td>
<td>USA</td>
</tr>
<tr>
<td>5</td>
<td>IT Director</td>
<td>12/2011</td>
<td>USA</td>
<td>01:30</td>
<td>USA</td>
<td></td>
<td>USA</td>
</tr>
<tr>
<td>6</td>
<td>Managing Director</td>
<td>12/2011</td>
<td>USA</td>
<td>02:15</td>
<td>USA</td>
<td></td>
<td>USA</td>
</tr>
<tr>
<td>7</td>
<td>CIO</td>
<td>10/2011</td>
<td>USA</td>
<td>02:30</td>
<td>USA</td>
<td></td>
<td>USA</td>
</tr>
<tr>
<td>8</td>
<td>IT Director</td>
<td>11/2011</td>
<td>USA</td>
<td>02:45</td>
<td>USA</td>
<td></td>
<td>USA</td>
</tr>
<tr>
<td>9</td>
<td>Managing Director</td>
<td>11/2011</td>
<td>USA</td>
<td>01:30</td>
<td>USA</td>
<td></td>
<td>USA</td>
</tr>
<tr>
<td>10</td>
<td>CIO</td>
<td>12/2011</td>
<td>USA</td>
<td>01:45</td>
<td>USA</td>
<td></td>
<td>USA</td>
</tr>
<tr>
<td>11</td>
<td>IT Director</td>
<td>01/2012</td>
<td>USA</td>
<td>02:00</td>
<td>USA</td>
<td></td>
<td>USA</td>
</tr>
<tr>
<td>12</td>
<td>Managing Director</td>
<td>01/2012</td>
<td>USA</td>
<td>02:15</td>
<td>USA</td>
<td></td>
<td>USA</td>
</tr>
<tr>
<td>13</td>
<td>CIO</td>
<td>02/2012</td>
<td>USA</td>
<td>02:30</td>
<td>USA</td>
<td></td>
<td>USA</td>
</tr>
<tr>
<td>14</td>
<td>IT Director</td>
<td>02/2012</td>
<td>USA</td>
<td>02:45</td>
<td>USA</td>
<td></td>
<td>USA</td>
</tr>
<tr>
<td>15</td>
<td>Managing Director</td>
<td>02/2012</td>
<td>USA</td>
<td>01:30</td>
<td>USA</td>
<td></td>
<td>USA</td>
</tr>
<tr>
<td>16</td>
<td>CIO</td>
<td>03/2012</td>
<td>USA</td>
<td>01:45</td>
<td>USA</td>
<td></td>
<td>USA</td>
</tr>
</tbody>
</table>

4440
The average time for interviews was about forty-five minutes and the time extension for each interview was basically determined by the time granted for the executive and also for his interest in the subject. The recording times indicated in the previous list doesn’t include the time spent with introductions.

The case studies are summarized in Table 4. Regarding to scope definition, this research adopted the following criteria: national banks have presence only in its countries, international banks have presence in some different countries with a few set of branches, while global banks have their business spreaded in the globe.

Table 4. The list of case studies

<table>
<thead>
<tr>
<th>Case No.</th>
<th>Bank</th>
<th>Country of Origin</th>
<th>Number of Employees</th>
<th>Scope</th>
<th>Collecting data methods</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Brasil</td>
<td>Brazil</td>
<td>120,000</td>
<td>International</td>
<td>Interview, website, documents</td>
</tr>
<tr>
<td>2</td>
<td>Brasil</td>
<td>Brasil</td>
<td>16,000</td>
<td>National</td>
<td>Interview, website</td>
</tr>
<tr>
<td>3</td>
<td>Brasil</td>
<td>Brasil</td>
<td>5,000</td>
<td>International</td>
<td>Interview, website, documents</td>
</tr>
<tr>
<td>4</td>
<td>Brasil</td>
<td>Brasil</td>
<td>300,000</td>
<td>Global</td>
<td>Interview, website, articles</td>
</tr>
<tr>
<td>5</td>
<td>Hong Kong</td>
<td>Japan</td>
<td>25,000</td>
<td>Global</td>
<td>Interview, website, interviews</td>
</tr>
<tr>
<td>6</td>
<td>Hong Kong</td>
<td>China</td>
<td>15,000</td>
<td>Global</td>
<td>Interview, website, documents</td>
</tr>
<tr>
<td>7</td>
<td>Hong Kong</td>
<td>France</td>
<td>150,000</td>
<td>Global</td>
<td>Interview, website</td>
</tr>
<tr>
<td>8</td>
<td>Hong Kong</td>
<td>Germany</td>
<td>100,000</td>
<td>Global</td>
<td>Interview, website, documents</td>
</tr>
<tr>
<td>9</td>
<td>U.S.A</td>
<td>United States</td>
<td>350,000</td>
<td>Global</td>
<td>Interview, website, documents</td>
</tr>
<tr>
<td>10</td>
<td>U.S.A</td>
<td>United States</td>
<td>45,000</td>
<td>Global</td>
<td>Interview, website, documents</td>
</tr>
<tr>
<td>11</td>
<td>U.S.A</td>
<td>United Kingdom</td>
<td>200,000</td>
<td>Global</td>
<td>Interview, website</td>
</tr>
<tr>
<td>12</td>
<td>U.S.A</td>
<td>United States</td>
<td>62,000</td>
<td>Global</td>
<td>Interview, website</td>
</tr>
<tr>
<td>13</td>
<td>U.S.A</td>
<td>United States</td>
<td>240,000</td>
<td>Global</td>
<td>Interview, website, documents</td>
</tr>
</tbody>
</table>

Each bank had at least two basic methods adopted in the research, interview with high executive and analysis of documents captured in the organization website. In some banks the researcher received internal documents (by request), and for others, articles in journals and trade magazines were selected. The column “collecting data methods” in the previous table provides a list by bank of used methods. The triangulation processes were carried out using these data.

6. Results

The presentation of the results follows the order of the hypotheses and the main research question.

6.1. IG and its relevance for banks

An IT bank executive in Hong Kong made an interesting observation, “If banks recognize information as “the asset”, the absence of information policies or information governance shows that something is wrong”. There seems to be a paradox here because while almost all banks recognize information as “the asset”, the vast majority still does not have specific policies and processes that directly address the subject.

When asked whether they believe that information governance is an important issue for banks, the bank executives from the three countries offered different and interesting answers. One Brazilian executive stated, “Yes. At the moment, within the IT area, we are creating a specific structure to deal with information management and information governance. That initiative is linked to an auditing project”. Another Brazilian executive was more emphatic, “I’d say that what was once desirable will become essential. Those who do not have good IG will be out the market. And I also think at some point in the future, it will be a criteria for obtaining a license to operate or not”.

An important bank executive in Hong Kong provided a very comprehensive answer “Yes. Without proper governance, one can use information for improper activities which may damage a firm’s reputation, revenue, credibility, and may be subject to regulatory and legal litigations”. In a similar way, another Chinese executive said “Yes. With better use of information a bank can be more efficient, reduce risks and improve services. All these combined will lead to higher returns for shareholders and create greater employee engagement”.

A particularly interesting response was given by an executive in the United States, “Yes. My central thesis is information governance increasingly important, massively important in the mega data world. If we don’t get these policies right we’ll have unnecessary duplication, unnecessary linkage, unnecessary complexity”. From an experienced executive the answer was “Yes, because, fundamentally, our product is information. We provide liquidity, we provide risk transference, we provide ideas, and we provide services as well, I guess, but underlying all of that is information”.

All the answers were positive, and it highlighted how sensitive the subject of information in banks is nowadays. Many of them are currently engaged in attempts, for example, to achieve KYC, which means ‘know your customer’. This is only additional evidence of what is clear from all the interviewed executives, banking is basically information. As if to confirm this, when asked the same question regarding the importance of information governance for banks, the senior advisor of the China Banking Regulatory Commission (CBRC) answered “Reliable information is the real asset for banks. It helps bankers to make good decisions. Reliable information comes from governance”.

6.2. Implementing IG in banks through an IGF

The second hypothesis in this paper is related to implementing IG in banks through an IGF. In this case,
the bank executives were asked whether they think that an information governance framework would help banks in their activities. One executive from a large bank in Brazil gave the following short answer, “I think so. It’s very convergent with our discussions and what we are trying to do”. The answer from another Brazilian banker was, “I think if you had discussed it before, since the technological renewal, from the times of technological evolution, if you had had this guidance... I think you would go in one direction without losing focus”.

In Hong Kong an executive said “The IGF can raise the awareness of senior management regarding the need for banks to a process by which they can allocate resources to manage their information. An IGF can make implementing IG in banks easier”. Another executive agrees with the framework, but sees the subject of IG as being part of the risk management area, “I totally agree. We’re going in this direction, but we don’t recognize it as an IGF. We’re working with risk management”.

In the United States, one executive was very concerned with the costs and risks, “The rate of consumption is outpacing the reduction in the unit cost of storage. The legal process is extraordinary expensive and if you know exactly what information needs to be stored and for how long, the cost can be cut”. This bank is discovering how to save money by implementing an IG program. Another very frank answer was given by an American executive, “I think it can help to simplify and reduce costs and increase security. However, I think the hurdles to effective IG are very high, because it is a strategic decision, taken by top management, and not a tactical one”.

The importance of IGF was demonstrated by the use of the words ‘cost’, ‘risk’ and ‘performance’, which are particularly relevant for banking industry today. In the words of one banker “I think it helps you manage risk, I think it helps you manage costs, I think it helps you manage the service levels that you provide”. For another, “With no proper governance framework, information might be used for improper activities which may damage the firm’s reputation, revenue, credibility, and the firm may be subject to regulatory and legal litigation”. Complementing the responses above, there is a notable remark from the senior advisor of the CBRC “An information governance framework can help banks ensure data quality, speed up time to market in product creation and innovation, simplify data architecture and reduce costs and risks”. For the majority of the executives, the answer to the question in this section was positive, although for some it is clear that implementing IG is not an easy task.

6.3. The proposed IGF for banks

This section deals with the third hypothesis and also the results of the case studies carried out in three different countries, while focusing on the proposed IGF. The third hypothesis is concerned with identifying the multiple dimensions and factors in an IGF that would reflect the dynamism of the banking industry. After all the interviews, there is no doubt that the banking industry is dynamic. There is no disagreement regarding this, although some executives claim there are differences in terms of dynamism when different kinds of banks are considered (retail, investment and others). So, for an executive in New York “It changes every day, it is constantly evolving”, or for an executive from Hong Kong “Very. Give me another example like banks. I can’t see any other example. It is changing so fast”, or for a Brazilian executive “You have to create constant dynamism in your organization. And when you have intense competition among such organizations, I think you end up creating a natural dynamic”.

To answer the main research question “What factors should be considered by banks in an information governance framework?” the IGF shown in Figure 2 was presented to and discussed with bank executives. Specific questions were put to the executives in an attempt to validate the dimensions and factors in the IGF. Thirteen case studies were completed and included triangulation processes involving at least two different sources of data, interviews and documents obtained from the banks’ websites. Hence, for example, for BRA1, data were collected during two interviews, from documents published on the bank website and also from documents delivered by bank executives (See Table 4).

Several important points can be drawn from the preliminary results of the research. Firstly, the factors accessibility, accountability, compliance, ethics, privacy and security are strongly present among the banks when the topic is an IGF. There are no exceptions to this. Secondly, the factors consumerization, mobility and standardization are causing additional concerns and leading the banks to make efforts in relation to those factors, as would be expected considering the recent technological changes in telecommunications around the world.

In general, the executives agreed with the IGF factors presented. When questioned about other factors not included in the framework, cost and usability were remembered by a few executives. One executive did not agree with the inclusion of the factor value in the IGF, in his opinion this is the desired result. Another executive disagreed with the inclusion of the factor...
culture. An interesting comment came from an executive in Brazil who suggested, rather than eliminating some factors, grouping them together, considering the extended scope of the IGF. There were also some references to the difficulties involved in implementing such an IG framework in banks, most of which are concerned with the need to prioritize the results. Others pointed out that IG is included in IT governance.

A particularly noteworthy finding is that amongst the banks included in the study, one, in the United States, is currently implementing an IG program. Its framework was presented to the researcher during the interview. They found that they can save time and also a lot of money by implementing such a program. It is interesting to note that in this case the project was assigned to the global CIO. The project’s objectives are to reduce costs and mitigate legal risks.

Lastly, it is interesting to note that while the majority of the studied banks have some policies or practices that address the factors contained in the proposed IGF, information is not usually their focal point. Moreover, in general, such policies and practices tend to be disconnected from each other.

7. Discussion

The comments made by the bank executive during interviews on different continents, such as “Information is one of our key assets in the firm”, or “With better use of bank information we can be more efficient, reduce risks and improve services”, or “The bank is nothing but information”, or even “Our product is information”, could certainly lead one to conclude that information is priority. However, in the real world this does not seem to be the case. Cortada [10] argues that corporations rarely have a comprehensive approach to the management of its most used and most important asset: information. The initial findings of this study among banks indicate that he is absolutely right.

Some of the executives interviewed in this study agreed that there is a tendency for the ‘T’ (Technology) in ‘IT’ to predominate in the IT field. In the recent years, organizations of all sizes have become fascinated by the resources created by information technology. This is easy to understand when one looks at the global figures for IT. According to Gartner, annual spending on IT in 2012 will reach US$3.8 trillion [24], a large part of which will be used to acquire new products and infrastructures.

In 2003, Nicholas Carr published “IT doesn’t matter” which caused huge stir in the IT industry. Indeed, mainly since the advent of internet, the evolution in software production, the spread of networks and the rise of the consumerization phenomena, there is a common perception that technology is available everywhere. The differential lies with information use. That is a clear sign of what is happening in the business world today which is very well explained in the work of Cortada [10], who argues that information is being elevated to its former prominence, a privileged position that was overtaken for a while by the glamour of IT. In other words, the “T” matters. That does not mean the “I” is not important, on the contrary it is vital to support the information processes inside organizations.

The results show that, in general, banks have already begun to implement some of the listed IGF factors in some way, although predominantly in unstructured forms that do not directly address information. That is a paradox because, while they all recognize information as the key “asset” in banking, the vast majority still has not introduced specific and integrated IG policies and processes.

The proposed IGF is composed of factors originating from the elements contained in the three basic theories used in this study, Agency, RBV and Dynamic Capabilities. Regarding the latter, the interviewed executives were unanimous about the dynamism of the banking industry, which indicates that adopting this theory was the right choice. The main research objective was to identify what factors should be included in an IGF for banks.

The IGF validation process was carried out among sixteen top executives from thirteen different banks in three different countries, none of whom said the IGF was invalid or not applicable. Some still see IG as part of IT governance and here there is a point of discordance. When dealing with all the aspects of information, using IT governance frameworks is inappropriate because they contain a clear technology bias. Furthermore, things are changing and in many of the participating banks the present researcher was able to identify an awareness of an uncomfortable situation and the need to move towards IG.

Another important aspect is the exponential growth in the amount of information both inside and outside these organizations. Banks are struggling to deal with the explosion of both structured and unstructured data, as suggested by this comment from an executive in New York, “As an organization today (January 2012) we have something like twenty eight petabytes of information and it’s growing exponentially”. So, on one side, there is cost of the storage and all the processes involved with the retention and recovery of information. More importantly, on the other side is the capability of the enterprise to use information effectively, and evidently, with few exceptions, the
bulk of them are not fully prepared for this. If a company is prepared, it should be able to, at least, answer the basic question proposed by Kooper et al. [30] “What information do we need, how do we make use of it and who is responsible for it?”

Another interesting result is related to the factors consumerization and mobility. Some banks in the United States see the consumerization phenomena as an opportunity, they know it’s not an easy decision, mainly for security reasons, but it is inevitable. In the words of an experienced American executive “In my life, I’ve learned not only to listen to what people say but also to watch what people do, but mainly watch where they are putting their money. So that’s a place to spend a lot of money, on this whole notion of mobility and consumerization”.

8. Conclusion

First, information governance is an emergent concept in the IS/IT field and at the same time is an increasingly important subject in the banking industry. The comments made by top bank executives emphasize this. Among the reasons given for this importance are the benefits provided such as reduced costs, reduced exposure to legal risk and improved performance.

Second, developing and implementing an Information Governance Framework (IGF) is accepted as natural course of action, though there is no one-size-fits-all solution. Third, the IGF is composed of multiple dimensions and factors to give flexibility and balance to the model.

Finally we conclude that IGF for banks would include the following factors: accessibility, accountability, communication, compliance, consumerization, context, culture, ethics, formal structure, mobility, monitoring, privacy, quality, retention, security, sharing, standardization, systems, transparency and value.

Which factors contained in the IGF presented herein will be considered of importance by an organization and which will not, will depend on that organization’s particular level of maturity, its own characteristics and its decisions regarding the desired improvements.

Lastly, this study proposes a new concept for Information Governance. Information governance is seen as the establishment of policies, through formal structures that define rules, procedures and decision-making rights regarding information management, in order to mitigate regulatory and operational risk, reduce costs and optimize the performance of the organization.

9. References

Recognizing the value of controlled knowledge, skills, and abilities along IT career paths: an organizational culture perspective


