Internal loss data collection implementation: Evidence from a large UK financial institution

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Abstract

The paper conducts a critical analysis of internal loss data collection implementation in a UK financial institution. We use elite semi-structured interviews, with a sample of five operational risk consultants from a leading international financial institution. The data is analysed using content analysis and the methodology follows the approach introduced by Wahlstrom (2006). The data covers a wide range of business areas, with particular attention drawn towards the development of internal loss collection and operational risk management. The results suggest that the development of operational risk management as a function stem from external compliance (Basel II) and the internal pressure to add value to the business portfolio. This need for compliance was augmented as a driver of internal loss data collection, however participants also recognised that the function of loss data collection is a tool of solid internal risk management and enhances managerial decision making. The research also highlights the problems in cleansing data in order to ensure that all information implemented in the capital allocation model is valid and reliable.

Keywords: Loss Data Collection, Operational Risk, Basel II, Regulatory Capital Allocation

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Introduction

It has long been established that an economy's banking sector plays a key role in economic development and growth. Traditionally this has been achieved by a process of intermediation, but more recently, over the past few decades, banks have undertaken increasing amounts of off balance sheet business which has increased the income generated by non-interest areas of the banking firm. It has also become ever more noticeable that banking (and bank performance) is heavily reliant on risk measurement and consequently - risk management. As Cebenoyan and Strahan (2004) suggest it is difficult to imagine as many risks being managed jointly as in banking.

Given the level of risk in bank operations, and the importance of the sector to the efficient functioning of the economy, it is no coincidence that domestic supervisory regulation has shaped the way in which UK financial institutions conduct their day to day operations. However, due to the global nature of banking, domestic regulation works alongside international agreements (where agreement can be found) with the recently approved Basel II Accord by the European Parliament being an example. The Accord aims to provide stronger incentives for improved risk management whilst developing a greater understanding of current industry trends and practices for the managing of risk. Power (2005) highlights the extended regulatory requirements of Basel II along with the Sarbanes Oxley Act (2002) as predisposing factors which have initiated the rapid development of operational risk management within banks – both in the UK and worldwide. Hoyte (2005) and Power (2005) further suggest that Basel II reflects a general climate of regulatory attention to organisational control systems and cultures of control, making operational risk a key component of global banking regulation.

The new framework comprises of three pillars which include: (Pillar 1) minimum capital requirements, (Pillar 2) supervisory review process and (Pillar 3) market discipline. These pillars are developed in a bid to reflect the way institutions are really managed with the aim being not to raise or lower the overall level of regulatory capital held by financial institutions but to enable regulatory requirements to be assessed on a more risk sensitive basis (see Stirk and Rew 2001 or Lastra 2004). This risk-based capital approach supplements existing fixed minimum capital standards with a fluid, formula-based minimum capital standard that rises and falls appropriately to a financial institutions portfolio (Barth 2001). One of the main justifications for regulating bank capital is to mitigate the potential of failures to create

systemic risk throughout an economy (see Santos 2002 Rowe et al 2004 Kroszner 1998). In addition, Pillar 1 includes the risk categories of credit risk and market risk which has been further enhanced by the introduction of operational risk. Justification of which can be underpinned by the difficulties at Northern Rock and the continued difficulties in world markets as witnessed by the fall of Lehmann Brothers and Bradford and Bingley.

For the purposes of our research we utilise the Basel Committees definition of operational risk, which they believe is "the risk of direct or indirect loss resulting from inadequate or failed internal processes, people and systems or from external events" (Basel, 1998, p3). Beans (2003) considers that unchecked operational risks can be fatal for financial institutions of all sizes, which would then inevitably have consequences for the economy and the wider society as losses attributed to operational risk may result in contaminating the domestic (and possibly the international) financial environment. Examples of the so called 'domino effect' have been much in the news recently with the widespread credit problems in the United States affecting institutions around the globe. However, there have been other major operational risk events in banking over the past decade which the authorities have managed in the interests of the economy to limit in effect, examples being Allied Irish and National Australia Bank.

The Basel Committee argues that such risk events are amplified by a number of contributing factors such as deregulation, globalisation and the growing sophistication and complexity of many financial products. Such complexity has made many off balance sheet instruments difficult to value and consequently made financial institution risk profiles difficult to measure (Basel, 2003). The paper begins with a look at operational risk and Basel II in more detail, and then introduces the methodology before presenting the results. The conclusions follow.

Operational Risk and Basel II

Power (2005) describes the process of capital regulation as a logic of prudential banking which requires individual financial institutions to maintain a buffer adequate to cover unexpected losses. In the international financial environment capital adequacy was first recognised formally by the Basel 1 Capital Accord (1988) which made important contributions to the prominence of bank capital regulation and promoting and improving international convergence of capital standards (Santos, 2002). However, it must be recognised that the body responsible for the first capital accord, the Basel Committee for

Banking Supervision (BCBS) has no national regulatory powers, but has de facto power via the implementation of its recommendations by national supervisory bodies and within the UK this is conducted by the FSA (Power 2005).

Influenced by the shortcomings of Basel I (see for example Jobst 2007 Petrou 2002 Vieten 1996 Underhill 1991 Jones 2000 Rowe et al 2004 Santos 2002 Power 2005) the Basel Committee began to develop a new strategy which recognised for the first time the calculation of regulatory capital based in part on the risk models and systems of the banks themselves (Power 2005). One area that had previously been ignored by Basel, but had emerged as an important issue in recent risk events, was the need for more cohesive operational risk measurement and management. As a result, Pillar 1 of the Basel II capital accord focused for the first time upon operational risk, and as Power (2005 p583) states:

> the category of operational risk is significant not merely as an assembly point for existing risk management practices, but also as a category of attention and visibility for threats which were either ignored by banks, or made insufficiently explicit in their management systems.

This view is further supported by Fontnouvelle et al (2006) and Hiwatashi (2002) who suggest that financial institutions have now started treating operational risk as a homogenous risk category that can be both managed and measured – but this has most likely arisen after initial soundings coming from Basel.

The Basel II framework provides three approaches of increasing sophistication to calculate risk based capital within the area of operational risk. Under the most sophisticated approach formally known as the Advanced Measurement Approach (AMA) there is a firm specific calculation of the capital requirement based on the firms internal risk measurement models (see Netter and Poulsen 2003 or Moodys 2002). These models use the institutions own metrics to measure operational risk including internal and external loss data, scenario analysis and risk mitigation techniques to set up its capital requirements (Alexander 2003 Netter and Poulsen 2003 and Fountnouvelle et al 2006). This approach imposes a number of modelling assumptions upon the financial institution which have to be made as the accuracy in predicting future loss values depends on the volume and quality of historical data (Embrechts et al 2003). As a result, some institutions are adopting the Loss Distribution Approach (LDA) where capital calculations are based on an historical database of operational loss events involving frequency and severity of events. Using this approach, a financial institution details its loss experience via ‘internal loss data’, with institutions gathering data

from the general ledger or from other pre-existing sources for this purpose (see Embrechts et al, 2003 Haubenstock and Hardin 2003 Fontnouvelle et al 2006).

Alexander (2003) and Moosa (2007) highlight two ways of implementing the internal LDA approach. First, the 'bottom up' approach is based on an analysis of loss events in individual business processes and attempts to identify each type of risk at that level. In contrast the 'top down' approach calculates losses at a firm level and then attempts are made to disseminate and allocate losses to the various business units. There is little evidence to suggest which approach best suits the process of data collection - with various opinions expressed in the literature for both (see Haubenstock and Hardin 2003 Gelderman et al 2006 Allen and Bali 2004 Currie 2004). Further, Fontnouvelle et al (2003) argues that little modelling of operational risk has occurred in the past due to the lack of a structured internal loss data collection process. As a result, financial institutions have tended to allocate operational risk capital via a top down approach. Problems are, however further exacerbated because both approaches show flaws due to the data within the LDA only covering short periods of time and thus containing few really large operational losses (Fontnouvelle et al 2006). Pezier (2003) and Allen and Bali (2004) believe these losses are 'tail events' that are low in frequency yet high in severity making them particularly elusive to capture, yet crucial to the stability of a financial institution.

Unfortunately, the LDA approach has been attacked for having further limitations. Alexander (2003) for example believes that the approach is too data intensive with a minimum of three years of historical loss data required in order to comply with Basel requirements. Second, the approach is potentially backward looking which in markets that evolve rapidly may mean that the data will not fully reflect future risks (Di Noia and Di Giorgio 1999 Briault 2002 Jordan 2001 Claessens et al 2002 Aue and Kalkbrener 2007). Further, Power (2005) suggests that the collection of loss data may be misconstrued as people concentrate on historic losses whilst ignoring critical events such as near misses and potential losses. The exclusion of such events may be detrimental to financial institutions as Muerman and Oktem (2002) and Phimster et al (2003) believe that crises and accidents are generally preceded by a build up of clear signs and anomalies. Consequently, Goodhart (2001) and Wei (2007) argue that because of these ambiguities about data collection and use, and also because significant single event operational losses are rare, databases are 'shaky and fragile'. While Wilson (2001) believes that given the difficulty of quantifying aspects of operational risk, the

reliance on a single number (capital allocation) may itself be an operational risk, leading authors such as Andres and van der Brink (2004) and Kuhn and Neu (2005) to discuss alternative approaches to fulfilling AMA in the form of scorecard and scenario based approaches.

In contrast, it has been argued that a comprehensive and reliable internal loss-event database will not only aid a financial institution in addressing the Basel II requirements but will also create a solid base for an effective operational risk management approach (Moodys, 2002). Harris (2002) further believes that despite all the perceived weaknesses, the loss-event database is necessary for the effectiveness of sound risk management and capital allocation.

Given the lack of agreement on the approach and effectiveness of the LDA, most would concur that a sound operational risk management framework has numerous advantages to a financial institution. Kalita (2003) believes that this strengthens security and safety not only in the financial institution but in the financial system as a whole. The Basel II framework is developed through a process of identifying, measuring, reporting and controlling risks with the fundamental structure of the framework being developed from the ten qualitative principles within Basel II (Haubenstock 2002).

The Basel Committee (1998) stated that institutions throughout the 1990s had started to devote substantial time reviewing and revamping new policies and procedures - signifying the importance of policy on an institutions operational risk framework. Although this framework is directly related to the operational risk within a bank it does not take into account the importance, or holistic nature of, operational risk to the synergy of risk management within the entire institution (Meagher and O'Neill 2000). Such an approach would create an organisational risk profile which is malleable - allowing for the organisation to retain some risks whilst shedding others (Meulbroek 2000). It is this inherent ability to shed and retain risk which allows an organisation to create a 'natural hedge' which avoids the duplication of risk management, which is crucial to the LDA and collection of internal loss data. This also creates a co-ordinated and consistent approach to risk management which companies have recognised as an important way to avoid individual departments being overlooked and improve reporting structures (Kleffner et al 2003).

The context of our current paper is therefore based upon a financial institutions ability to provide a risk based capital measure of operational risk using the Advanced Measurement

Approach (AMA) whilst implementing the internal loss data collection (LDC) process. It is the implementation of this process which will provide the focus of the research as institutions come to terms with what is required in order to fully integrate such a process within their business lines.

Methodology

We conduct a critical analysis of internal LDC implementation in a large UK financial institution. To the authors' knowledge (and in agreement with Wahlstron 2006 and Schrand and Elliot 1998) there is a dearth of previous primary research in this area - which can be explained by the lack of any available data. As a result, our approach takes a primarily qualitative, inductive approach in order to provide crucial insights (see Yin 1994). This method is considered one of the most appropriate ways from which to gather valid data on processes and decision making within companies (Gummeson 2000). A semi-structured approach was selected as the depth and intimacy of interviewing, on a one-to-one basis, provides a platform from which to maximise the research result (see for example Lincoln and Guba 1985 Denzin and Lincoln 1994 O'Loughlin et al 2004).

The method meant selecting a non-probability judgement sample which allows the hand picking of respondents for the interviews. Undertaking a non-probability judgement approach was essential (given the dearth of past research and expertise in the area being researched) as it ensured a sample which could contribute most directly and appropriately to our investigation. Glaser and Strauss (1967) argue that this approach focuses the investigation on those individuals for whom the processes being studied are most likely to occur – thus tapping into their expertise. The approach is therefore the optimal way to establish the present and future practices of operational risk data management in light of Basel II, in addition to determining the impact of LDC on a major financial institutions business operations. The interviews aimed to uncover the "why's" and "how's" as the basis of qualitative material.

In line with the chosen approach, it was decided that a sample of fifteen individuals from the operational risk policy implementation team of a major UK financial institution would be selected for the semi-structured elite interview. These individuals had major responsibility and exposure to Basel II LDA and LDC implementation within their financial institution. Sykes (1990) and O'Loughlin et al (2004) highlight that although normally small in size, purposive sampling provides the advantage of allowing flexibility and manipulation of the

sample of particular interest to the research question. The selection of these participants was through the use of the so called snowballing technique (Burgess 1982 Patton 1990). This provided the foundations of research validity as the accuracy of the data and its degree of correspondence to reality will be determined by the participants. Further, due to the nature of the study, a large amount of non-standard data is predicted to be produced - making data analysis problematic. In order to overcome this limitation of qualitative data, information gathered was analysed using common themes in the participant's descriptions (Barritt 1986). The remaining sections of the article are organised as follows: First the themes as derived from the interviews are outlined; this is then followed by an analysis of these themes. The final section summarises the research and provides an explanation of the critical factors involved in LDA implementation.

Results and Discussion

The Emergence of the Operational Risk Function

The first theme emerging from the data concerned the development of the operational risk function - both internally within the participating institution - and externally through compliance with the regulatory authorities. Thus there were indications that financial institutions were moving towards expanding their operational risk function but this has been encouraged and extended by an external regulatory push. For example, all our respondents suggested that the function was currently an area of expansion within the organisational structure, with one participant stating *"in the old retail world we had two, maybe three bodies, whereas as now we have many"*. Another contributor suggested that the operational risk function *"sprung up due to a serious fraud within the organisation, and this highlighted the need to get better at identifying these sorts of things"*. This supports the work of Beans (2003) who considers that unchecked operational risks can be disastrous for financial institutions and alludes to the notion that financial institutions may be slowly evolving their perceptions of what an effective operational risk management strategy can achieve. For example, Hoyte (2005) and PWC (2007) suggest that there is now an ongoing re-evaluation of the value of the operational risk function within financial institutions with a shift of focus away from Pillar 1 towards an agenda of embedded 'use' in the form of Pillar 2 and 3.

However, there has been a clear external push from regulatory bodies over the past decade and all participants in our study considered this to be key to the development of the operational risk function in their institution. This concurs with Garrity (2007) and Power

(2005) who both suggest that the extended regulatory requirements of Basel II, and Sarbanes Oxley, have both acted as catalysts towards the further development of the operational risk function. However, evidence from our interviews indicates that those within financial institutions may have evolved their viewpoint, for example, it was stated that *"I think at first the main driver was the external need to comply with regulation, but I think that has evolved now"*. This indicates that the risk function may initially have been developed as a tool of compliance to appease the regulators but is now being seen as a value enhancing strategy in its own right.

Evidence of this further emerged when discussing the pressure to add value to the financial institution. All participants perceived their role was a *"value adding function"* and expressed the importance of internal operational risk management to achieve this function. For example, it was stated that:

> the mantra we work to at operational risk is a no surprises environment and making sure that all of the processes we develop enhance that, we must ensure we are adding value, improving the business, and saving money. We have to quantify our existence because we are not an income generating part of the business.

Participants perceived the operational risk management function as more than a risk mitigation tool, as it exists to *"identify threats as well as opportunities to the business"*. From this response it seems that participants were aware that they might not necessarily create a profit for the business but could add value in other, less transparent ways (supporting the previous work of Buchmuller et al 2006 Lewis and Lantsman 2005 and Alexander 2003). Importantly, they must transmit these ways to key personnel within the institution. However Power (2005) suggests that operational risk has had difficulties attracting attention to itself and in the past visible threats have either been ignored by banks, or made 'insufficiently explicit in their management systems'. One way of achieving this, forwarded in our study, is to highlight that the management of operational risk can offer cost reducing possibilities which may be as important as the revenue generating functions of other key risk areas such as market and credit risk (Alexander 2003).

Again, there is evidence that institutions are becoming swayed by arguments suggesting that the operational risk function can indeed add value. For example, Hiwatashi (2002) and Fontnouvelle et al (2006) both suggest that financial institutions are now treating operational risk as a homogenous risk category that can be managed and measured. Wahlstrom (2006)

corroborates this by suggesting that a quantitative figure can make it easier to obtain sustainable resources for improving levels of staff development. Out with the need to comply with regulation and internal support one participant also mentioned that it is important:

> that in the industry, you provide evidence to regulators and shareholders, demonstrating that you have a robust control environment, you know what your risks are and you know how to manage them effectively, this can then be used positively in investments and acquisitions.

Operational risk practitioners now believe that operational risk management can be considered an important synergetic function within a financial institution, a function that is analysed by competitors and can be attributed to confidence within a market (this is also corroborated by Webb, Marshall and Drennan 2005).

Drivers of the Loss Data Collection Process

The second theme emerging from the primary data was that of the drivers and requirements of loss data collection. These included the need to compile three years of data to comply with the Advanced Measurement Approach as interviewees suggested that the collection of loss data can create an audit trail and best practice for ensuring risks, process and controls are above the risk appetite of the firm. Throughout all of the interviews it was clear that participants were aware that loss data collection was a fundamental requirement of the Advanced Measurement Approach to capital allocation. However, the participants were divided in relation to the organisational requirement for the data. One participant stated that it was *"purely to get numbers for the capital model"* and highlighted the fact that they would like to see the data inform decision making further in order to be *"pro-active"*as discussed by PWC (2007).

It was suggested that the pressure to progress through the Basel II project had hindered this to date - as the institution concentrated efforts on collecting, rather than analysing the data. In spite of this, one participant suggested that the collection of internal loss data was indeed part of the risk management process, stating that *"being able to know what went wrong and how much this has cost is vital because past experience can help future understanding"*. This attitude concurs with Harris (2002) who recommended that loss databases are necessary for the effectiveness of sound risk management and maximising profit - although such advantages may only be realised with the interpretation and analysis of such databases. Interestingly this seems to have led to ambiguities in responses as to the purpose of LDC within the organisation - as some participants feel it is strictly for modelling use, while others

see it as best practice for risk management. This contrary picture could be directly related to the fact that the project was not yet fully complete and the habitual modelling of the data had not begun within the organisation. Fontnouvelle et al (2003) highlight this situation by stating that little modelling has been done within the market due to the lack of a structured internal loss data collection process, and this would be a fair representation of the organisation with which we undertook our investigation.

However, in relation to the process moving forward, the primary data was unanimous in supporting the collection of internal loss data as a method of best practice for operational risk management. Thus, the database could be utilised as a quantifiable performance indicator as to the efficacy of the organisation in managing losses/processes/controls. Further, Wahlstrom (2006) suggests that the disclosure of operational risks can, at some stage in the future, be transferred to other areas of the business. As such, operational risk management, and the practices of internal loss data collection within the institution could be used as a fertile breeding ground for sound risk management policies - which can then be disseminated to other areas of the business. This dissemination will also determine the future of operational risk data management, which may have been considered a contentious issue as it may question the future of the participants' jobs within the operational risk data collection function.

However, all participants highlighted the importance of "*creating a seamless operation*" which will eventually become "*streamlined and a function of business as usual at the lowest levels within the organisation*". This suggests that loss data collection will become the daily duty of everyone within the organisation, with a move away from project orientated risk management processing to a business as usual operation, aided by the implementation of a new risk processing tool. This tool will disseminate the risk control and process responsibilities away from the operational risk team towards those who "*own direct responsibility of these risks*". One participant highlighted the future of their job in relation to this tool by suggesting that their would be no need for them to collect the data and they went further to explain that this would therefore allow them to analyse, and create more pro-active uses for the data as their time would not spent setting up the collection process as it is now.

This view is in line with Alexander (2003) who suggests that the process of internal loss data collection is labour intensive.[1]

Challenges of LDC

The participant all expressed the view that prior to the (external) requirements of Basel II the organisation already looked upon operational risk with a triangular strategy; "*the traditional heart of it in the organisation has always been around business continuity, allied to that you would have issue escalation and new product development"*. It was clear the organisation had invested in forward looking, pro-active, and mitigating operational risk management strategies. The responses we received supported the work of Buchelt and Unteregger (2004) and Hoffman (2002) who also argued that long before Basel II financial institutions had various control mechanisms.

In relation to the introduction of internal loss data collection to the already active processes mentioned above, one participant concluded that "*the loss data challenge was dipping into your general ledger process to suck out what's happened, whilst ensuring that you weren't sucking out anything more than you had to"*. This clearly suggests that there are many events within the cost base/ledger that are not attributed to operational failure and therefore it is important to ensure that the data which is being collected for the loss data submission is relevant and valid. Prior to internal loss data collection being calculated within the capital allocation model, it is critical that all loss data events are valid at the point of entry. Garrity (2007) highlights this point by stating that management must be confident of the loss data's integrity before such data can be used to make decisions. This process is known as data cleansing, and acts as a filter to ensure that only relevant loss data collection issues are included in the loss data collection submission. This problem was considered by Vaughan (2005) and Harris (2002) who suggest that how organisations 'cleanse' errors should be part of its ritual of management. That is, the process of data cleansing should be considered as pertinent to the ability to perform good risk management.

In addition, it must be remembered that operational risk within the sector is constantly evolving which was highlighted by one participant who said *"there hasn't been a year in the last decade that something hasn't happened whether it be criminal fraud, twin towers or Basel II"*. This is critical to area of internal loss data collection because, if the definitions are changing over time, the event inclusions will change - making it difficult to compare data as

[1] As previously mentioned it is important to note at the primary data collection stage participants were still in the process of developing the loss data collection project, and therefore are not judging the process on its finished product.

the science evolves. This is reiterated by one participant who stated that the organisation has now tried to develop its outlook by involving the triangular process of operational risk management whilst becoming *"more modular data driven, rather than just mental and experience driven"*. This evolution suggests a move by the organisation from qualitative risk control, to quantitative risk accountability. However, this move towards quantitative management methods has been outlined by Wilson (2001) who suggested that reliance on a single number can be a risk in itself. Whilst Wahlstrom (2006) identified that operational risk is a phenomena that, in practice, is hard to reveal, making a move towards quantification by the organisation more complicated (see also Mercer Oliver Wyman 2004 Allen and Bali 2004 Crouchy 2001).

Nonetheless, the interviews conveyed the fact that the process of data cleansing has affected the way in which the business operates. This is due to the fact that the organisation employs a 'bottom up approach', a process which Alexander (2003) and Garrity (2007) have highlighted as applicable to requirements of the AMA approach. The 'bottom up' approach has offered the organisation the ability to 'cleanse' and filter its data streams from the point at which the data loss event occurs. This allows those who have a full working knowledge of the event or process failure to detail its shortcomings and convey this message vertically to the operational risk management function. This localised knowledge can then be used by those within the operational risk management function to address the event whilst reducing the workload placed upon retrieving information - as the event has already been cleansed for them. This in turn allows for a quicker response time to the issue by the operational risk team, which could be valuable if the event was a high frequency/high severity issue. However this comes at a cost as outlined by Moosa (2007) and Power (2007) as these bottom-up models rely on information provided by employees which may not be forthcoming particularly if it was there fault or if a capital charge to a particular unit (namely their own) will increase due to the report.

Organisation Wide Responsibility to LDC

Paramount to the operational risk process operating effectively is the raising of awareness throughout the institution as to the importance of loss data collection as a Basel II process. As with all policy implementation within an organisation, it is critical to ensure that all the major stakeholders within the organisation are aware and understand its core objectives. One participant highlighted that for loss data collection to succeed it becomes intrinsically dependent upon business level staff highlighting to their risk representative that a loss has

occurred. In order for this to occur the participant suggested that *"we have become a lot more pro-active in the collection of issues outside an operational environment, so we engage with marketing, commercial, finance"*. In an attempt to recalibrate the organisational routines and standards within other areas of the institution the LDC team have engaged in organisational learning through the process of education, based on experience of the LDC process.

Wahlstrom (2006) suggested the importance of this process as it can contribute to a corporate culture that, to a much greater extent, is tolerant of human error thus eradicating the problems discussed by Moosa (2007) and Power (2007). Our responses indicated that the cultures within areas of the business which are non-risk orientated such as marketing, are now *"less likely to hide risks"* stating *"what would have happened prior to the cascading of LDC was that marketing would have taken the loss out of their budget which means it would have been hidden as a loss"*. Whereas now it is reported due to open and honest communication culture through the assurance that they will not be blamed for reporting the loss. Research by Hoffman (2002), Buchelt and Unteregger (2004), reiterate the point conveyed within our findings, that is, operational risk is not a new phenomenon however the focussed, structured and disciplined approach outlined by Basel II could be considered innovative. Therefore one of the toughest tasks for management effecting change motivate employees throughout the entire institution to be adaptive in how they see their role (Heifetz and Laurie 2001).

Therefore one of the biggest issues for financial institutions may not be the collecting and cleansing of data, or the modelling of capital requirements. It may actually be the implementation of such an organisationally wide project in order to ensure all those involved within the business realise their role in the LDC process. Key to this is the instilling of a strong operational risk culture (Waring and Glendon, 2001 Chang 2001 Rao and Dev 2006), as it will act as a sense-making mechanism that guides, shapes and moulds the values, behaviours and attitudes of employees (O'Reilly and Chatham 1996). One participant gave the anecdotal example that *"call centre managers couldn't make any sense of the idea*" as they work as a client facing lower tier level of the organisation with little operational risk experience. It could therefore be assumed that the implementation of the LDA has had an impact and raised awareness within the organisation as highlighted by the example of the call centre manager. A point summarised by Power (2007) when he suggested that new forms of data collection are always a behavioural challenge, for the process to succeed "every worker

needs to be a knowledge worker" (Wang and Ahmed 2003). Whether it be due to operational risk specialists engaging outside their own environment as evidenced in this research. Or through the implementation of an operational risk framework based on the ten qualitative principles of Basel II (Basel 2003) as argued by Bolton and Berkey (2005).

Summary of Findings

The opportunities offered by the implementation of the Basel II AMA to operational risk capital allocation far exceed the development of an international regulatory alliance on the issue, as expected by the Bank for International Settlements. This approach not only offers a financial institution the ability to develop its own risk metrics and modelling capability, it also presents the institution with the ability to continually improve its operational risk management techniques in an attempt to reduce the requirement to hold capital for this function. Thus creating an opportunity investment in the reallocation of this capital whilst rewarding good risk management techniques.

The overall aim of this article was to conduct a critical analysis of internal loss data collection implementation within a UK financial institution. The implementation of this process is critical to an institutions ability to produce the above mentioned risk metrics and models as the historical loss data collected will provide the foundation data set from which to develop future pro-active modelling techniques. Further, the research identified that the process of loss data collection is perceived to be a pertinent tool within holistic operational risk management practices. However it is important to note that this tool is not without its limitations.

There were signs that operational risk was beginning to take shape within financial institutions but regulatory compliance has acted as a key driver. It is therefore no surprise the institution under investigation reallocated considerable resources to meet the regulatory demands placed upon them as they identify weaknesses in both controls and processes during the loss data collection task. As the institution employs a 'bottom up' approach it allows them to filter relevant data at the point of failure escalate the relevant information to the relevant operational risk department in a timely, standardised format allowing for rapid recovery and repair of events or issues. However, this process relies on information provided by employees at the lowest levels of the organisation. This may be particularly challenging due to the fact that employees may not be forthcoming with information particularly if their department may

inherit an increased capital charge due to the event or if they are directly responsible for the event occurring. On a more personal level employees which are subject to performance related pay may be financially discouraged in the reporting of events. Another disadvantage of such an approach is the difficulty of these lower level staff understanding the importance of loss data collection in the larger scheme of capital allocation for the institution.

In order to mitigate against the above mentioned ambiguities with the 'bottom-up' approach the institution adopted a pro-active organisational learning strategy with business functions around the institution who may not be necessarily have been exposed to the processes required prior to LDC implementation. This gave the operational risk teams the ability to create a better understanding of the process for these business areas whilst ensuring that they realise the importance of the LDA function and therefore understand that open and honest communication of losses is considered best business practice. The participants also highlighted that this engagement with other areas of the business helped to improve the risk culture within areas of the business which until that point may not necessarily have considered themselves as a risk orientated business unit in the first place. The emphasis on an embedded risk culture was highlighted throughout both the literature and in the primary research, with the participants describing the hiding of risks as an obstacle which must be overcome. However the culture and improved understanding of the process will provide the foundations from which all other risk management processes will follow and therefore should not be overlooked in an attempt to comply with regulators.

One such process that is reliant on this embedded risk culture is that of data cleansing, this is pertinent to the LDA as it will ensure the integrity and validity of the data which will eventually be developed for operational risk modelling and management decision making. As the institution employed the' bottom up' approach it enables the cleansing of data at the point at which the event occurs therefore improving the amount of data rich information collected, relevant to each event. However as the institution was seeking to compile three years of data for regulatory compliance difficulties were encountered when looking at previous losses. This is further exacerbated by the heterogeneous nature and definition of operational risk which was evident in the replies from all participants. This process of data cleansing will improve over time as business units become more aware of the requirements of the model, to the point whereby the collection process will become a business as usual task conducted by all business units within the institution. This will disseminate the responsibility of the LDA to

those with the most knowledge within that particular area of the business allowing for the operational risk practitioners to concentrate on the analysis of the data. A view which in this study was considered by some participants to be overlooked at this moment in time as resources were concentrated in the area of compliance.

Although the institution under investigation had already pro-active risk management techniques in place prior to Basel II, the drive for compliance initiated a move towards enhanced operational risk governance. This consequently gave the operational risk management function a formal identity, which in turn allowed them to ‘add value’ out with the generation of revenue through the identification of threats as well as opportunities. Unlike that of market and credit risk, the operational risk dilemma is faced by every member of every department within an institution. This makes the implementation of LDA more complicated. It is therefore imperative that the LDA foundations from which all other risk management techniques can be placed are solid, whether it be data modelling, scenario analysis or key risk indicators.

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