Workflow and Issue Management
Deutsche Bank AG

A Major Qualifying Project
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Abstract
This project, completed at Deutsche Bank, aims to improve workflow and issue management among group divisions and across borders. The project goals are to create a best practices document (BPD) compiling suggestions for enhancements to the existing issue management module, and to develop mock-up functional screens illustrating the best practices. The WPI MQP Team conducted research and interviews to identify functionality gaps needing improvement. The BPD proposes options for closing these gaps, thereby ensuring financial and managerial transparency and efficiency.
Acknowledgements

We would like to thank Barry and Raj at Deutsche Bank for allowing us to bring our ideas and contributions to the OPAL Finance Team. We would also like to extend thanks to Lisa and Neelam for welcoming us to the team, and for providing us with the necessary resources, guidance, and support to complete our project.

We are grateful to each of our interviewees for their willingness to take time with us to answer our questions. Their contributions were essential to the success of our project, and we appreciate their support.

This project would not have been possible without the efforts of Professor Art Gerstenfeld, our advisor and the Director of the Wall Street Project Center. We would like to express our gratitude to Art for providing us with this opportunity.
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Executive Summary

Investment banks on Wall Street must leverage each minute detail of their operations in order to gain advantages over industry competitors. These corporations require that functional operations are performed using the most efficient and effective technological applications. Operations management must collaborate with the technology department to develop programs that optimize both functionality and efficiency, while minimizing costs to the company. Every day these cutting-edge technological applications evolve and change daily operations, and thus provide competitive advantages. At Deutsche Bank (DB), the OPAL application is one such operational and technological program that maintains and organizes internal operations such as communication and file transfer. This Major Qualifying Project is based on the enhancement of the functions within OPAL, thereby improving the efficiency of Deutsche Bank.

Deutsche Bank currently faces challenges with issue reporting and tracking within the OPAL application. The various divisions and locations of the bank use differing issue management modules, which complicates issue tracking and resolution. There is a need for an improved issue management module that satisfies both onshore and offshore requirements with a clear, detailed presentation of issues, and a more efficient issue tracking technique.

This project aims to improve workflow and issue management among group divisions and across borders through the compilation of suggestions for enhancements to the existing issue management module within OPAL. To develop these suggestions, the WPI Team conducted research and interviews to identify functionality gaps between user needs and potential system capabilities. We then created a best practices document (BPD) that proposes options for closing these functionality gaps, and thereby ensuring financial and managerial transparency and
efficiency. The document also includes mock-up functional screens to illustrate possible design of the proposed enhancements.

We began the project with qualitative research, which we divided into internal and external categories. Our internal research examined issue management at DB, and our external research examined issue management modules in use at different companies.

Within internal research, we reviewed documentation produced at Deutsche Bank regarding workflow and issue management. Such documents included files summarizing currently used IM modules as well as previously conducted studies that compare and assess these IM modules. Other internal sources included demonstrations of the OPAL applications as well as the user acceptance testing (UAT) version of the OPAL application. Our internal research provided us with further background information regarding IM at Deutsche Bank. We used this information to focus our external research and interviews.

Within external research, we investigated features in existing external issue management modules, issue management best practices compiled by external organizations, and issue management modules in use at other corporations. External research provided us with alternative perspectives on the topic of workflow and issue management, and encouraged the consideration of additional features in the OPAL issue management module.

We continued the development of our project with interviews with Deutsche Bank employees. The purpose of the interviews was not only to learn the details of the OPAL issue management module, but also to understand the wishes and requirements of employees for potential improvements to the system.

Using the information that we studied in our research, we developed a questionnaire alongside the OPAL Finance Team. We used this questionnaire to direct conversation with our
interviewees. The questions provided the interviewees with the opportunity to express their concerns and suggestions for issue management processes at DB, and allowed us to identify areas in need of improvements.

Upon the completion of the research and interviews, we created the best practices document. The research and interviews revealed functional gaps between user needs and system capabilities, and these best practices aim to close those gaps through suggestions for enhancements to the CIB Finance OPAL issue management application. The document also includes two mock functional screens that offer possible designs for the development of the functionality of the most essential guidelines stated.

The best practices compiled in this report summarize our analysis of internal and external research as well as internal interviews with employees representing various divisions and global branches of Deutsche Bank. The best practices should be considered to be recommendations for the improvement of workflow and issue management within CIB Finance. The next step towards the production of such enhancements is to consider the implementation of the best practices in both the short and long term. Short-term recommendations include the review and prioritization of the best practices for implementation. Upon prioritization, the OPAL Finance Team should consult with the Information Technology division to investigate the feasibility of the implementation of additional features that reflect high priority functions. Long-term recommendations include email integration, issue management module integration, and workflow integration. The OPAL Finance Team should, however, first investigate user acceptance and technological feasibility of each practice prior to its implementation.

Upon establishment of new features within the OPAL issue management module, the system should operate more efficiently, with a more user-friendly interface, and more effective
issue identification, analysis, and closure techniques. Additionally, the improved system should provide greater financial and managerial transparency among Bank divisions and across borders.
Chapter 1: Introduction

Investment banks on Wall Street must leverage each minute detail of their operations in order to gain advantages over industry competitors. These corporations require that functional operations are performed using the most efficient and effective technological applications. Operations management must collaborate with the technology department to develop programs that optimize both functionality and efficiency, while minimizing costs to the company. Every day these cutting-edge technological applications evolve and change daily operations, and thus provide competitive advantages. Such technology applications may range from complex high-frequency trading programs to communication programs as simple as email or an intra-office chat program. At Deutsche Bank (DB), the OPAL application is one such operational and technological program that maintains and organizes internal operations such as communication and file transfer. This Major Qualifying Project is based on the enhancement of the functions within OPAL, thereby improving the efficiency of Deutsche Bank.

1.1 Deutsche Bank

Deutsche Bank is a leading global investment bank with a mission to “compete to be the leading global provider of financial solutions, creating lasting value for our clients, our shareholders, our people and the communities in which we operate” (Deutsche Bank Mission and Brand, 2011). The Bank is organized into four business divisions: Asset Management (DeAM), Corporate & Investment Bank (CIB), Private and Business Clients (PBC), and Private Wealth Management (PWM) (Deutsche Bank, 2011). Across each business division, there are two underlying functions: Run the Bank and Change the Bank. Run the Bank, or RTB, encompasses all functions of the Bank that involve daily client interactions involving products and services.
Change the Bank, or CTB, includes all technological and operational functions of the bank. CTB focuses on the development of improvements to systems and functions that are used to complete RTB tasks. This project was completed alongside the OPAL Finance Team of CTB within the CIB Finance division.

1.2 Project Goal and Overview

Deutsche Bank currently faces challenges with issue reporting and tracking within the OPAL application. The various divisions and locations of the bank use differing issue management modules, which complicates issue tracking and resolution. There is a need for an improved issue management module that satisfies both onshore and offshore requirements with a clear, detailed presentation of issues, and a more efficient issue tracking technique.

This project aims to improve workflow and issue management among group divisions and across borders through the compilation of suggestions for enhancements to the existing issue management module within OPAL. To develop these suggestions, the WPI Team conducted research and interviews to identify functionality gaps between user needs and potential system capabilities. We then created a best practices document (BPD) that proposes options for closing these functionality gaps, and thereby ensuring financial and managerial transparency and efficiency. The document also includes mock-up functional screens to illustrate possible design of the proposed enhancements.

This project is occurring at a critical time in the development of OPAL. Initial improvements to the existing system have already been implemented, other improvements are in testing, and yet others are in development. The completion of this project will provide the OPAL
team with recommendations for the development of a more comprehensive issue management application within the OPAL application to achieve more efficient workflow.

Chapter 2: Background and Literature Review

In order to develop best practices for an improved issue management (IM) module, we need to first understand the overall reporting system used (OPAL) and its functionality and capabilities. This chapter provides background information on OPAL and its issue management application in particular. We used this information in our subsequent research to analyze other IM modules and to understand the needs of Deutsche Bank employees.

2.1 OPAL

OPAL, or Operations Portal, is the DB-specific finance-wide mechanism for the delivery of information among departments and across borders. OPAL offers functions such as documentation management, workflow, issue and incident management and tracking, personalized dashboards, a calendar, and more. The various divisions of DB use OPAL to complete different tasks. This project is based in the CIB Finance division, where there are four main components of OPAL Finance:

1. **Workflow**: The workflow mechanism is for the upload, review, sign-off, KPI assignment, and V&C (validation and control) commentary.

2. **Issue Management**: The IM module enables FDs (Financial Directors) to efficiently log systemic and recurring issues with GBS (Global Business Services, another department within Deutsche Bank), and track the resolution of such issues.
3. **Checklist/Calendar**: The checklist and calendar allow FDs to maintain, track, and organize tasks for completion.

4. **Alertboard**: The alertboard offers a consolidated view of KPIs (Key Performance Indicators) and statuses that give the user a quick summary of necessary information (CIB Finance, 2011).

### 2.2 Workflow and Issue Management

In general, issue management refers to the process of anticipating, identifying, evaluating and responding to issues that affect the organization (Issue Management Council Best Practice Indicators, 2011). At DB, the issue management module is an application of OPAL based within any given workflow. The application enables FDs to efficiently log issues with GBS and track their resolution. A document cannot complete its trajectory through its workflow until any issues that have been raised are resolved and closed within the system. The IM module is intended to further assist an FD in clearly evidencing V&C – to ensure that necessary and appropriate information is documented clearly and properly.

#### 2.2.1 Workflow

A basic overview of the current process for workflow is as illustrated in Figure 1 below (CIB Finance, 2011):
The blue boxes show a normal workflow pattern, and the gray arrows leading to the black boxes indicate actions taken when an issue needs to be raised. To raise an issue, the FD must log the issue and send it back to GBS for correction. If, upon return from GBS, the FD still does not wish to approve the document, it must be escalated to a qualified manager.

2.2.2 Issue Management

When an FD wishes to raise an issue, he or she may enter a description of the problem to send to GBS. Within the Issue Management application for CIB Finance, there are four components:

- Issue Management Dashboard, which shows an overview of all issues in the system;
- Issue Details, which displays the specifics of each issue;
- Add Issue, where users can input or raise an issue; and
- Search, where users can query the issue management module.
Figure 2 below shows the generic issue management process:

![Issue Management Process](image)

When an issue is raised, the issue raiser identifies the issue in the IM system. The raiser must also analyze the issue, or enter details about the issue such as a description of the issue, and its priority level. The issue is also assigned an owner, who then must investigate and resolve the problem. The owner then notifies the raiser of the resolution, and when the raiser confirms and verifies the resolution, he or she closes the issue in the IM system.

The current issue management process within the OPAL application follows a similar path. Issues inherit basic information, entered manually upon uploading the document, from the original file in the workflow. Then, when a user raises an issue, there is a generic form to be sent to GBS. The issue raiser, in this case, the FD, must enter a description of the issue and send it back to the original owner (in this case, a GBS employee). When the issue raiser and issue owner agree to the proposed resolution, the issue is closed in OPAL.

However, the entire resolution of the issue is not tracked, as follow-ups may be conducted over email or on the phone. Thus, the aging of the issue is not recorded, documents are transmitted through different mediums and may get lost along the way, the overall path of the issue is not clearly evidenced, etc. There is a need for a more efficient presentation of issues and the resolution process.
2.3 Summary

This basic understanding of the current OPAL issue management module and its processes provides us with a basis upon which to assess other issue management programs, conduct interviews with DB employees, and identify key points to compile best practices.

At the time of this project, DB employees are using the second edition of the IM module, as some amendments have already been made to the initial version. Further improvements to the OPAL Finance issue management module will allow users to more efficiently and effectively track issues and documents while providing greater transparency across divisions. Issues can be resolved in a more timely manner, directed to the appropriate individuals, and documented in an organized method.
Chapter 3: Methodology

To improve the existing issue management module, we needed to establish guiding principles for the enhancement of the OPAL Finance application. As presented in Chapter 1, these guiding principles were to be compiled in a best practices document to clearly describe how issues should be addressed within OPAL. The goal of the best practices document is to confirm that proper communication and service levels are agreed upon, and ultimately reach the project goal of ensuring financial and managerial transparency and efficiency.

In order to develop the issue management best practices document, we implemented two core methods: research and interviews. Research of issue management techniques within Deutsche Bank and at other corporations provided us with general knowledge of and current approaches to the topic. Interviews with key DB employees provided us with more specific details regarding issue management at DB, including employee wishes and needs for the issue management module.

3.1 Research

We began the project with qualitative research, which we divided into internal and external categories. Our internal research examined issue management at DB, and our external research examined issue management modules in use at different companies.

Within internal research, we reviewed documentation produced at Deutsche Bank regarding workflow and issue management. Such documents included files summarizing currently used IM modules as well as previously conducted studies that compare and assess these IM modules. Other internal sources included demonstrations of the OPAL applications as well as the user acceptance testing (UAT) version of the OPAL application. Our internal research
provided us with further background information regarding IM at Deutsche Bank. We used this information to focus our external research and interviews.

Within external research, we investigated features in existing external issue management modules, issue management best practices compiled by external organizations, and issue management modules in use at other corporations. External research provided us with alternative perspectives on the topic of workflow and issue management, and encouraged the consideration of additional features in the OPAL issue management module.

3.2 Interviews

We continued the development of our project with interviews with Deutsche Bank employees. The purpose of the interviews was not only to learn the details of the OPAL issue management module, but also to understand the wishes and requirements of employees for potential improvements to the system.

Before beginning the interviews, we scheduled conferences with DB employees holding various positions in assorted divisions including Finance and GBS in locations around the world: New York, London, Frankfurt, Manila, Singapore, and Mumbai. We focused on interviewing a range of employees in order to be sure to incorporate the views of all divisions that use issue management modules at the Bank.

Then, using the information that we studied in our research, we developed a questionnaire alongside the OPAL Finance Team. We used this questionnaire to direct conversation with our interviewees. Questions for discussion included, “What is your definition of an issue and/or an issue, and what triggers an issue?” and, “What do you think is the ideal method through which to track the aging of an issue?” The questions provided the interviewees
with the opportunity to express their concerns and suggestions for issue management processes at DB, and allowed us to identify areas in need of improvements. The full questionnaire can be found in Appendix B.

3.3 Summary

From the research and interviews conducted in this project, we acquired a comprehensive understanding of the issue management process in general, at Deutsche Bank, and in other industries. We also learned of the functionality gaps between issue management system user needs and system capabilities. Upon completion of our research and interviews, we extracted and compiled the key points from each source. The specific findings of our research follow.
Chapter 4: Findings and Analysis

This chapter presents the results and analysis of the research and interviews conducted during the project. From this analysis, we leveraged the most essential aspects of issue management according to internal and external sources in order to compile the best practices and design the user interfaces that follow in Chapter 5.

4.1 Research

As mentioned in the previous chapter, research was the first step that we took towards achieving the goals of our project. Research provided us with information regarding existing issue management techniques at DB as well as outside of the Bank and the industry. As mentioned, our research involved both internal and external sources.

4.1.1 Internal Research

Internal sources from Deutsche Bank included documentation, demonstrations, and user testing of the OPAL application. This research provided us with background information regarding issue management terminology, the functionality of issue management modules, and the developments currently taking place with the various issue management modules at the Bank.

Documentation

Documentation includes any internal documents provided to us that pertain to OPAL and other IM modules at DB. These documents were essential to the startup of our project because they describe issue management in general, OPAL and its purpose and functions, and other IM modules at the Bank. We examined the following documents in particular:

a. *V&C Evidencing in OPAL Finance/GBS Interaction (CIB Finance, 2011)*: This file provides a basic overview of OPAL, Workflow, and Issue Management within OPAL.
The Workflow is illustrated in a diagram, showing the path of a document through the review and sign-off process. Issue Management is depicted within the same diagram. The file also includes screenshots of the “Review and Sign-off” screen within the Workflow and the “Add Issue” screen within the Issue Management module. These screenshots are accompanied by descriptions of the functions of the screens.

b. *V&C Evidencing: Functional Design Document (Lavrikova et al., 2011)*: This document contains the functional requirements for V&C Evidencing within OPAL. The document focuses on the implementation of a workflow within OPAL to assist in evidencing V&C. The contents of this document helped up to further understand the components of the workflow, and to see the original detailed requirements for the development of OPAL.

c. *Guideline to Issue Management for Group Finance (Kock, 2010)*: This document outlines the details of JIRA, another issue management module in use within other divisions of the Bank. It defines terminology used in the module, details how to use each feature of the module, and shows how JIRA interlocks with a separate workflow tool. JIRA is more commonly used at the Bank than OPAL, making it essential that we learn how this program functions in comparison to OPAL.

d. *Issue Management Tool for Group Finance (Picazio and Zink, 2010)*: This business requirements document is the output of a previously conducted study at Deutsche Bank. It states the benefits of improving the issue management process and tool(s), and offers recommendations for consolidating OPAL, JIRA, and dbSymphony to create one tool for PSC Finance Service Delivery Divisions and their onshore Finance counterparts. The key component of this document is the “Wish List for Long Term Issue Tracker” which states employee suggestions for improvements.
e. *Issue Management Tool Comparative Analysis (Service Excellence Division, n.d.)*: This file focuses on JIRA and compares it to OPAL and dbSymphony. The file lists the strengths and weaknesses of each platform, and suggests either the integration or the consolidation of all three platforms.

f. *JIRA & OPAL Comparative Analysis (Amen, 2009)*: This document is a compilation done by an employee within the Service Excellence Division at DB. It describes the functions and benefits of both JIRA and OPAL, as well as the advantages and disadvantages of each. Attached screenshots illustrate the similarities and differences between the two platforms.

**Demonstrations**

DB employees demonstrated the use of OPAL Finance and OPAL GBS for us, in order to show how the modules are actually used on a daily basis. The OPAL Team demonstrated OPAL Finance, while the IT department demonstrated OPAL GBS. We were able to see the differences between the two, and that OPAL GBS offers a greater variety of more advanced options to the user. The different options in OPAL GBS provided additional features to consider for enhancements to OPAL Finance. OPAL Finance is more basic and the ease and depth of use is not as sufficient as in OPAL GBS.

During the demonstrations, we observed the structure of the platforms: the page tabs, the links between pages, and the blank fields (such as *title*, *assigned to*, *due date*, *location*, etc.). We noted that some of the fields are pre-populated, and others are fill-in, drop-down, or grayed out.

We observed the current format and options available in OPAL Finance in order to gain a general understanding of the structure and how we could build upon it.
User Experience

The ability to use OPAL was essential to our understanding of its functions and operations. We were able to log in to the desktop module and navigate through the workflow and issue management process. The user experience provided a more comprehensive explanation of each function and option rather than a simple description or screenshot.

Conclusions

The completion of our internal research revealed a foundation upon which to build the external research and the interview questionnaire. It is clear that extensive research has been completed on issue management at Deutsche Bank. Several issue management modules are simultaneously in use across the Bank, and therefore there is a need for a uniform module that can be customized for each division or project, in order to improve upon transparency and efficiency among divisions.

4.1.2 External Research

Our research of issue management outside of Deutsche Bank revealed two types of information: features and best practices. In addition, we examined issue management modules unique to specific corporations, for comparison to OPAL. This information is important to the development of suggestions for improvements to issue management at Deutsche Bank because it provided alternative perspectives for consideration.

Features

Countless issue management modules are available for purchase to any company. These modules are downloaded from the internet onto desktop computers. This project examines three external issue management modules (MetricStream, IssueNet, and IssueTrak), all of which offer similar features:
<table>
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<th>Feature</th>
<th>Description</th>
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<tbody>
<tr>
<td><strong>Issue Recording</strong></td>
<td>Assign unique ticket number for issue tracking</td>
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<td>Categorize tickets based on severity level, responsible unit</td>
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<td>Correlation with past data</td>
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<td></td>
<td>Documents/files can be attached at any stage of the IM process</td>
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<tr>
<td><strong>Review &amp; Reporting</strong></td>
<td>Automatically routed for review and analysis to authorized users based on pre-configured rules for review, approval, and disposition</td>
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<td>System auto-generates mandatory reports in customizable formats</td>
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<td><strong>Investigation &amp; Remedial Actions</strong></td>
<td>Automatic alerts are sent to appropriate personnel (via email) for action</td>
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<td></td>
<td>Alerts contain impact of issue, identify root cause</td>
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<td>Specific tasks are assigned to specific individuals/teams to ensure responsiveness</td>
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<td>Managers can track the status of a case as it advances through its remediation</td>
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<tr>
<td><strong>Reports &amp; Metrics</strong></td>
<td>Dashboards provide visibility into the IM process and highlight high-priority cases that need evaluation</td>
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<td>Real-time visibility</td>
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<td>Graphs show trend analysis</td>
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<td>Module can produce status tracking reports</td>
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<tr>
<td></td>
<td>Flexible reports contain drill-down capabilities with statistics and data by a variety of parameters (business unit, process, division)</td>
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<td></td>
<td>Multi-level, role-based access controls to cater to multiple locations, product lines, and business units</td>
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<tr>
<td></td>
<td>e-signature capabilities</td>
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<tr>
<td>Feature</td>
<td>Description</td>
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<tr>
<td><strong>Notifications</strong></td>
<td>Custom notifications can be used to update/engage parties of any event</td>
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<tr>
<td><strong>Email Integration</strong></td>
<td>Allows users to associate email conversations with an existing issue and event&lt;br&gt;Submit, create, and close an issue/associated task directly from email</td>
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<tr>
<td><strong>Property Inheriting</strong></td>
<td>Reuse and redefine items across similar types</td>
</tr>
<tr>
<td><strong>Simple Business Rule Setup</strong></td>
<td>User definable conditions can be assigned to any stage of the workflow process to allow/deny workflow transition based upon predetermined business goals (ensure proper approvals are provided before transitioning an issue to the next stage)</td>
</tr>
<tr>
<td><strong>Auditing Tools</strong></td>
<td>Complete audit trails recorded and displayed for every item type tracked</td>
</tr>
<tr>
<td><strong>Task Management</strong></td>
<td>Tasks are automatically created and assigned during workflow execution&lt;br&gt;Upon creation, tasks are assigned to specific individuals/teams&lt;br&gt;Allows managers/groups to determine overall workload, response time, etc.</td>
</tr>
<tr>
<td><strong>Comprehensive Workflow Designer</strong></td>
<td>Model and organize business processes into distinct workflow tasks&lt;br&gt;Allows users to drag and drop elements onto a canvas for diagrams for overall process visualization</td>
</tr>
<tr>
<td><strong>Simultaneous &amp; Nested Workflows</strong></td>
<td>Allow for quick expansion, tandem work, and more efficient business processes</td>
</tr>
<tr>
<td><strong>Process Automation &amp; Escalations</strong></td>
<td>Actions can be associated with workflows to automate the creation of tasks, notifications, and issue updates&lt;br&gt;Automatic trigger escalation is based on a combination of items such as SLAs, elapsed time, halted progress, a due date, status updates</td>
</tr>
<tr>
<td><strong>Unlimited Customization</strong></td>
<td>Ability to define object properties, item types, and relationships&lt;br&gt;Administrators can set up specific fields, lists, rules, tasks, forms, and issues designed specifically to the organizations’ needs&lt;br&gt;Create unique environments for each group, department, business unit&lt;br&gt;Each user can create a personalized view within personal settings</td>
</tr>
<tr>
<td><strong>End User Web Portal</strong></td>
<td>End users can submit, follow up on, or research issues&lt;br&gt;System can be integrated into internal company website</td>
</tr>
<tr>
<td><strong>Knowledge Base</strong></td>
<td>Allows teams to quickly create a formatted and categorized article available to others</td>
</tr>
<tr>
<td><strong>Organization</strong></td>
<td>Develop and organize projects, issues, and tasks into hierarchal folder structures for issue submission, tracking, and reporting</td>
</tr>
<tr>
<td><strong>Extensive Reporting</strong></td>
<td>Configurable dashboards that present real-time and historical data in the form of charts, gauges, and various report formats&lt;br&gt;Can be configured to user’s needs via drag and drop design and scripting&lt;br&gt;Can export into common document formats</td>
</tr>
</tbody>
</table>
| Search & Query Builders | Simple and complex queries  
Can be saved as templates and shared with other users to facilitate efficiency and communication |
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Productivity Tools</td>
<td>Improve end user experience – spell check, screen capture, etc.</td>
</tr>
<tr>
<td>Feature</td>
<td>Description</td>
</tr>
<tr>
<td>-------------------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td><strong>Workflow and Task Management</strong></td>
<td>Delegate pre-defined and ad-hoc actions using tasks</td>
</tr>
<tr>
<td></td>
<td>Initiate pre-defined processes such as change management, new hires, etc. using task groups</td>
</tr>
<tr>
<td></td>
<td>Make users other than issue assignees temporarily responsible using next actions feature</td>
</tr>
<tr>
<td><strong>Tasks</strong></td>
<td>Assign multiple tasks within an issue (can be dependent upon each other/cancelled automatically after a specific response to another task)</td>
</tr>
<tr>
<td></td>
<td>Task manager notifies users that they have been assigned a task</td>
</tr>
<tr>
<td><strong>Organization and Group Filters</strong></td>
<td>Make specific Quick Picks, issue types, tasks, and more available only to members of certain organizations and groups</td>
</tr>
<tr>
<td></td>
<td>Create specific site colors, knowledge base articles, projects, etc. seen only by members of certain organizations</td>
</tr>
<tr>
<td><strong>Global Issues</strong></td>
<td>Work related issues simultaneously</td>
</tr>
<tr>
<td><strong>Operation Schedule and Time Zone</strong></td>
<td>Adjust time calculations</td>
</tr>
<tr>
<td><strong>Quick Picks</strong></td>
<td>Turn common issues into Quick Picks available on the “submit issue” screen</td>
</tr>
<tr>
<td></td>
<td>Include pre-defined field values, tasks, and attachments</td>
</tr>
<tr>
<td></td>
<td>Auto-populate your entry by selecting the issue from a drop-down</td>
</tr>
<tr>
<td></td>
<td>Enter specifics about this particular issue</td>
</tr>
<tr>
<td></td>
<td>Invoke directly when an issue is submitted via email</td>
</tr>
<tr>
<td><strong>Service Contracts</strong></td>
<td>Subtract labor hours from established customer service contracts</td>
</tr>
<tr>
<td><strong>Solutions</strong></td>
<td>Close all issues with consistently professional messages by creating pre-defined solutions</td>
</tr>
<tr>
<td><strong>Email Notifications</strong></td>
<td>Keep submitters, assignees, and other interested parties updated through email</td>
</tr>
<tr>
<td></td>
<td>Customize messages in your own words with the information that you wish to include</td>
</tr>
<tr>
<td><strong>Service Level Agreements</strong></td>
<td>Set and monitor expectations for first response and resolution times</td>
</tr>
<tr>
<td><strong>Automatic Assignments</strong></td>
<td>Minimize issue queue backlogs by routing issues based on pre-defined criteria</td>
</tr>
<tr>
<td><strong>Recurring Issues</strong></td>
<td>Submit routing issues such as warranty expirations, maintenance, administration, etc. on a predefined schedule</td>
</tr>
<tr>
<td><strong>Calendars and Reminders</strong></td>
<td>Schedule issue and task events</td>
</tr>
<tr>
<td></td>
<td>Set up email notifications and reminders from the calendar or from required and target dates on an issue or project</td>
</tr>
<tr>
<td><strong>Attachments</strong></td>
<td>Add files of any size and format to issues, users, organizations, projects, knowledge base articles, assets, and surveys</td>
</tr>
<tr>
<td><strong>Escalations</strong></td>
<td>Ensure prompt responses by both submitters and assignees through escalation rules</td>
</tr>
<tr>
<td>Feature</td>
<td>Description</td>
</tr>
<tr>
<td>-------------------------------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Issue Auditing</td>
<td>Store and archive audits for compliance and legal purposes</td>
</tr>
<tr>
<td>Project Management</td>
<td>Estimate and track timelines, expenses, and progress across multiple issues through Projects</td>
</tr>
<tr>
<td></td>
<td>Track multiple projects through project categories</td>
</tr>
<tr>
<td>Schedule Agent Availability</td>
<td>Schedule agent availability in the calendar</td>
</tr>
<tr>
<td></td>
<td>Re-route auto assignments and email notifications when agents are out of the office</td>
</tr>
<tr>
<td>Screen Pops</td>
<td>Integrate a compatible phone system to populate caller details when submitting new issues</td>
</tr>
<tr>
<td></td>
<td>Caller-entered issue numbers open corresponding issue for support agents</td>
</tr>
<tr>
<td>Mobile Device Accessibility</td>
<td>Including a dashboard, search function, my issues, anytime maintenance, knowledge base access, with on-demand updates</td>
</tr>
<tr>
<td>Customization</td>
<td>Site appearance – color scheme, title, logo, and color spectrum</td>
</tr>
<tr>
<td></td>
<td>Menu options – add your own menu options within the interface for easy access to other websites</td>
</tr>
<tr>
<td></td>
<td>Site References – describe your own terminology for issues, issue subjects, issue types, projects, and locations</td>
</tr>
<tr>
<td></td>
<td>Issue, User, and Organization – create your own drop-down, text, and date fields for issue, user, and organization records</td>
</tr>
<tr>
<td>Web-Based Access</td>
<td>Information available online – no client-side installation</td>
</tr>
<tr>
<td>Knowledge Base</td>
<td>Offer access to FAQs, common resolutions, standard procedures and product and service information</td>
</tr>
<tr>
<td></td>
<td>Search and view public articles</td>
</tr>
<tr>
<td>Dashboard</td>
<td>View key metrics at a glance in a graphical display</td>
</tr>
<tr>
<td></td>
<td>Filter results by issue class</td>
</tr>
<tr>
<td>Summary Reports</td>
<td>Run built-in reports with date range and sorting options</td>
</tr>
<tr>
<td>Report Writer</td>
<td>Design and share custom queries and reports from the report writer</td>
</tr>
<tr>
<td>Schedule Reports</td>
<td>Email saved searches and reports in Excel or HTML to interested parties on a routine basis</td>
</tr>
<tr>
<td>Searches and Saved Searches</td>
<td>Search, save, and share issue criteria using a variety of output and sorting options</td>
</tr>
</tbody>
</table>
**Best Practices**

Best practices for issue management are compiled by various organizations for their own operational improvements. The best practices for issue management at three organizations (the CDC, Issue Management Council, and Seapine Software) follow:

**Table 4: CDC Best Practices**  

<table>
<thead>
<tr>
<th><strong>CDC</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Escalation Process:</strong></td>
<td>An issue escalation process should be determined as a part of the overall issue management planning activities and should be documented.</td>
</tr>
<tr>
<td><strong>Documentation:</strong></td>
<td>All issues, regardless of how minor they seem, should be centrally documented using some type of issue tracking system or log.</td>
</tr>
<tr>
<td><strong>Minimum Requirements:</strong></td>
<td>Tools used to manage issues should contain (at a minimum) a unique identification number, priority, issue description, impact summary, action steps, current status, and issue owner.</td>
</tr>
<tr>
<td><strong>Resolution Statement:</strong></td>
<td>Issues should be stated in such a way that it is clear how they can be resolved.</td>
</tr>
<tr>
<td><strong>Prioritization:</strong></td>
<td>Issues should be prioritized, assigned specific owners, with next steps and due dates documented. Issue ownership should be communicated clearly to those responsible for action items.</td>
</tr>
<tr>
<td><strong>80/20 Rule:</strong></td>
<td>Be mindful of the “80/20 rule,” which says that 80% of the project impact will come from approximately 20% of the documented issues. Concentrate the majority of mitigation efforts on issues that pose the greatest potential threat to project success.</td>
</tr>
<tr>
<td><strong>Regular Review:</strong></td>
<td>Regular review of issues and the issue log is a highly recommended practice. The review process should occur daily for complex projects and at least weekly for simple projects. Open issues should be reviewed at each project team status meeting and progress made on the issues should be recorded in the issue log.</td>
</tr>
<tr>
<td><strong>Issue History:</strong></td>
<td>Closed issues should remain in the issue log as a historical record and to facilitate lessons learned activities.</td>
</tr>
</tbody>
</table>
Table 5: Issue Management Council Best Practices  
(*Issue Management Council Best Practice Indicators, 2011*)

<table>
<thead>
<tr>
<th>Issue Management Council</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Structure:</strong></td>
</tr>
<tr>
<td>There is an established mechanism to identify current and future issues through environmental scanning/issue analysis.</td>
</tr>
<tr>
<td>The organization has adopted a formal process to assign and manage issues.</td>
</tr>
<tr>
<td>Responsibility for stewardship of the issue management process is clearly assigned and mechanisms are in place to build organizational expertise in the discipline.</td>
</tr>
<tr>
<td><strong>Implementation:</strong></td>
</tr>
<tr>
<td>“Ownership” of each major issue is clearly assigned at an operational level with accountability and results linked to performance reviews.</td>
</tr>
<tr>
<td>Progress against key issues is formally reviewed with organizational “owners” on a regular basis and the status of each is monitored at the highest management level.</td>
</tr>
<tr>
<td>The Executive Committee of Board of Directors has fiduciary oversight of issue management; has mechanisms in place to report progress to Directors and/or external stakeholders; and has authority to intervene in the event of non-compliance or misalignment.</td>
</tr>
<tr>
<td><strong>Integration:</strong></td>
</tr>
<tr>
<td>Formal channels exist for managers at all levels to identify and elevate potential issues for possible integration into broader strategic planning, including external stakeholder management.</td>
</tr>
<tr>
<td>Management of current and future issues is well embedded within the strategic planning and implementation processes of organizational clients or owners.</td>
</tr>
<tr>
<td>Issue Management is recognized and organizationally positioned as a core management function which is not confined to a single function or department.</td>
</tr>
</tbody>
</table>
### Table 6: Seapine Best Practices

*(Best Practices for Effective Defect Tracking, 2008)*

<table>
<thead>
<tr>
<th>Seapine</th>
<th>Adopt a unified approach to defect tracking and involve and get feedback from all groups who use the tool, in order to ensure that proper steps are taken to manage change.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Unified Defect Tracking</strong></td>
<td>Make it easy for users to interact with the system to report defects (to encourage use).</td>
</tr>
</tbody>
</table>
| **Display Information at the Decision Point** | Keep the input screens clean and easy to understand.  
Information should be added as the issue moves through its lifecycle. |
| **Use Relevant Terminology**  | When creating an input screen to capture defect information, it needs to be abundantly clear what each field represents.  
Use terminology that is familiar to the organization. |
| **Capture Report Data**       | When the application is set up, fields should also be added to capture information that helps with reporting (trend reports).  
Information should be added as the issue moves through its lifecycle. |
| **Write Clear, Reproducible Defects** | It is vital to collect relevant, useful information because the benefits of the tool are only as good as the information put into it.  
Each defect should require: title, summary, system configuration, steps to reproduce, expected results, and notes.  
Classify reports appropriately.  
Use required fields to ensure the level of detail is captured.  
Configure email to notify customers when there is a problem with their defect reports, or use alerting mechanisms to notify users when the defects they reported are fixed. |
| **Reduce Ambiguity With Screenshots** | Attach screenshots of failures to reduce ambiguity and confusion. |
| **Avoid Defect Duplication**  | To minimize duplication, users should query the database prior to submitting a defect.  
Although defects can be reported multiple times, they should be added to the same defect report.  
Merge duplicated defects if the defect tracking tool supports record merging. |
| **Match the Team’s Workflow** | Provide traceability and accountability throughout the defect tracking process.  
Configure an enforceable workflow that captures all the necessary information needed to manage the defect, from being reported to merging in code changes to releasing the next build containing the fix.  
After logging in to the defect tracking system, developers can be presented with a list of their assigned defects that need to be fixed. |
| **Meet Compliance Measures**  | Meet SOX compliance by capturing relevant change information throughout the lifecycle of a defect.  
Lock down the history of changes so they cannot be altered or modified. |
A reasonable description of a change includes who made it, to what, why, and when.

<table>
<thead>
<tr>
<th><strong>Integrate with Change Management</strong></th>
<th>Integrate what is being done on the development side in code changes with what is being done in the defect tracking system.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Associate a defect with a check in or commit action to provide an additional description of the change that was made.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Involve Customers</strong></th>
<th>Release the application on a limited basis to customers and users willing to beta test the software.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Offer a way to get feedback from users of the product, internal or external.</td>
</tr>
</tbody>
</table>

Despite different organizational goals and purposes, the majority of the best practices are quite similar. For example, all three organizations listed agree that best practices include the need to have a formal issue documentation process, as well as a method through which to assign issues to employees for resolution. This illustrates that best practices for issue management are generally applicable to any industry; however, each general best practice can be further divided into more detailed practices.

**Corporate Modules**

The third portion of our research consisted of investigating issue management techniques at other corporations, in and out of the banking industry. This information shows the similarities between the Deutsche Bank approach to issue management and approaches at other businesses. In particular, we investigated three corporations: Siemens, Philips, and NASA. The features of the modules in use at each of these corporations are summarized in Table 7 below.

**Siemens**

According to Siemens’ Product Lifecycle Management Division, “Siemens maintains a comprehensive problem and issue tracking system plus a knowledge repository of FAQs, previously reported/resolved issues, and tips and techniques” (*Getting Started with TeamCenter*, 2010). This issue tracking system is called TeamCenter Issue Manager.
TeamCenter is “a virtual gateway to [Siemens’] product information connecting all who need to collaborate with product and process knowledge.” The program enables digital management of product and manufacturing data in the context of the product lifecycle. It can be accessed either online with a given URL, or through the program that is installed on the desktop (Getting Started with TeamCenter, 2010).

There are 53 applications within TeamCenter, including the Issue Manager, as well as the Change Manager, Lifecycle Viewer, Report Generator, Schedule Manager, and Workflow Designer. The Issue Manager application tracks problems/issues with a product by letting the user manage the review of the issue and the approval and implementation of the resolution. The user can assign the issue to an owner and rank its priority and status. Issues are identified both manually and in “batch mode,” or the nightly database query that searches for predefined issues (Getting Started with TeamCenter, 2010).

The module is user customizable: the functionality is presented in views and perspectives. Views enable the user to choose what information to display and in what layout. A perspective is a personalized set of views that has been saved. Users can create multiple perspectives, and display multiple perspectives simultaneously (Getting Started with TeamCenter, 2010). Such customization makes the module a more efficient tool for the user.

TeamCenter and OPAL are both databases for the organization and communication of data, although TeamCenter is a much larger system that incorporates more business divisions and has a greater variety of capabilities. The product lifecycle within TeamCenter can be compared to the Workflow within OPAL, as they both transfer information regarding a particular item (a product or a document).
**Philips**

The ASA Laboratory of Philips, which functions as a primary research and test facility for consumer electronics and “e-devices,” uses IBM’s Rational ClearQuest to track defects within the corporation. Rational ClearQuest is a part of Rational ClearCase, which Philips uses as a configuration management tool.

Philips chose to implement Rational ClearQuest because of its high levels of customization and flexibility. ClearQuest “tracks and manages every type of change throughout the software development lifecycle,” which improves final quality of the software (*Philips Modernizes Defect Tracking Capabilities*, 2003). Because there is no room for error within software designed for consumer electronic products, it is essential that Philips operates with a reliable system for defect tracking. The quick implementation and user acceptance capabilities of the system help employees quickly acclimate to the new module.

Employees must access ClearQuest online, which makes the system available from various locations. This feature is beneficial for employees who need to share information with overseas locations, or for traveling employees. The system also generates comprehensive metrics reports, charts, and graphs that can be customized by the user (*Philips Modernizes Defect Tracking Capabilities*, 2003).

**NASA**

NASA uses the Trouble Ticketing System developed by Remedy. Trouble tickets are electronic documents entered in a common format, that report and record problems that affect hardware, software, technical documents, or procedures within a certain department. The system then tracks the resolution of the problem (*Problem Management*, n.d.).
The Trouble Ticketing System is able to store and transfer tickets among employees and facilities. Trouble Tickets are triggered using an online format, an email template, or by contacting users directly. The system can also mark ticket statuses, produce summary reports, and send automatic notifications to users, and allows customized escalation and action rules as well. However, supporting documentation cannot be attached to a ticket. It must be sent in an email to the database administrator, who then submits the file to the appropriate individual or group (Problem Management, n.d.)

Table 7: Corporate Modules Summary

<table>
<thead>
<tr>
<th></th>
<th>SIEMENS</th>
<th>PHILIPS</th>
<th>NASA</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Database</strong></td>
<td>TeamCenter</td>
<td>Rational ClearCase</td>
<td>Remedy</td>
</tr>
<tr>
<td><strong>IM Module</strong></td>
<td>Issue Manager</td>
<td>Rational ClearQuest</td>
<td>Trouble Ticketing System</td>
</tr>
<tr>
<td><strong>Function:</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Access</strong></td>
<td>Online</td>
<td>Online</td>
<td>Desktop</td>
</tr>
<tr>
<td></td>
<td>Desktop</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Triggers</strong></td>
<td>Manual Entry</td>
<td>N/A</td>
<td>Custom HTML Documents</td>
</tr>
<tr>
<td></td>
<td>“Batch Mode”</td>
<td></td>
<td>Email Template</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Contact User Services</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Remedy Action Request System</td>
</tr>
<tr>
<td><strong>Issue Details</strong></td>
<td>Priority Assignment</td>
<td>Flexible for Each Project</td>
<td>Description</td>
</tr>
<tr>
<td></td>
<td>Ownership Assignment</td>
<td></td>
<td>Submitter ID</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Impact Assignment</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Extended Description (optional)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Resources (optional)</td>
</tr>
<tr>
<td><strong>Customization</strong></td>
<td>Views</td>
<td>Customize for Each Project</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td>Perspectives</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Reporting</strong></td>
<td>“Report Generator” TeamCenter App</td>
<td>Customizable Charts, Graphs, Reports</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Integration</strong></td>
<td>With other TeamCenter Apps</td>
<td>With other Rational Tools</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Conclusions

From our external research, we see that there are countless issue management modules available for purchase. Some of these include features that could be beneficial to Deutsche Bank if included in the OPAL module. While the external modules and best practices all contain slight differences, the most common feature that is emphasized is customization. This is an example of a feature that Deutsche Bank should leverage for improvements to the OPAL application.

4.2 Interviews

The second phase of our project consisted of interviews with key DB employees. We completed 21 interviews over a period of four weeks, and each interview lasted about 15-20 minutes. These interviews were conducted with employees in different roles in various divisions of the Bank. We spoke with individuals in Deutsche Bank offices in New York, London, Frankfurt, Manila, Singapore, and Mumbai. Because of the variety of positions, we received considerable variation in the range of responses to our questions.

The interview responses are compiled first by interview (see Appendix C), and then, upon the completion of all interviews, we compiled all responses to each question individually (see Appendix D). This allowed us to compare and contrast responses, and to identify similarities among responses that may indicate a best practice. The analysis of each question follows.

Question 1: What is your definition of an issue/incident? What triggers an issue?

We asked each employee for their definition of an issue or an incident to gain an understanding of the minimum criteria required for the entry of a ticket into the issue
management system. The following is a sample of issue and incident definitions from our interviews:

**Table 8: Question 1a**

<table>
<thead>
<tr>
<th>Issue</th>
<th>Incident</th>
</tr>
</thead>
<tbody>
<tr>
<td>Similar to a risk; Has not yet happened</td>
<td>Mechanical; Has already happened</td>
</tr>
<tr>
<td>Impacts the team’s daily performance; Requires action</td>
<td>Less critical; Is not a direct problem</td>
</tr>
<tr>
<td>Not as critical as an incident; Impacts the SLA</td>
<td>More critical</td>
</tr>
</tbody>
</table>

These responses range from one extreme to another. About half of the interviewees considered an issue to be either a miscommunication, an unexpected occurrence, or a risk; while an incident is considered a permanent, more severe mistake. The remaining half of interviewees offered a variety of definitions for issue and incident, such as “an issue or incident is anything that cannot be rectified within the next day” (Interview #19), and “there is no difference between an issue and an incident, but rather the severity level of issues should clarify the level of criticality” (Interview #10). From these answers, we can see that clear and agreed upon definitions of “issue” and “incident” should be identified and provided to all OPAL users.

The following is a summary of responses for the triggers of an issue:

**Table 9: Question 1b**

<table>
<thead>
<tr>
<th>Rank</th>
<th>Trigger</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Email</td>
<td>12 out of 14</td>
</tr>
<tr>
<td>2</td>
<td>Phone</td>
<td>6 out of 14</td>
</tr>
<tr>
<td>3</td>
<td>Manual Entry</td>
<td>4 out of 14</td>
</tr>
<tr>
<td>4</td>
<td>Meeting</td>
<td>4 out of 14</td>
</tr>
<tr>
<td>5</td>
<td>Auto entry into system</td>
<td>3 out of 14</td>
</tr>
<tr>
<td>6</td>
<td>Other</td>
<td>2 out of 14</td>
</tr>
</tbody>
</table>

There is little variety in the triggers of issues and incidents. The majority of our interviewees stated that most issues are communicated via email, over the phone, and through
manual entry into the OPAL system. Some interviewees offered other responses, such as “through conversation” and “in weekly meetings” (Interview #17). This is because these individuals may use a different issue management module, or lack an established issue management tool altogether.

**Question 2: What are some common factors that cause an issue to be raised?**

We asked this question in order to recognize the various root causes of issues as well as more detailed issue types. We wanted to know if there could be a more efficient way to enter issues into the issue management system based on a common root cause.

The following list shows the top five common factors that cause an issue to be raised:

<table>
<thead>
<tr>
<th>Rank</th>
<th>Causes</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Inaccurate delivery</td>
<td>10 out of 13</td>
</tr>
<tr>
<td>2</td>
<td>Late delivery</td>
<td>6 out of 13</td>
</tr>
<tr>
<td>3</td>
<td>System issues</td>
<td>3 out of 13</td>
</tr>
<tr>
<td>4</td>
<td>Poor communication</td>
<td>2 out of 13</td>
</tr>
<tr>
<td>5</td>
<td>Process not working</td>
<td>2 out of 13</td>
</tr>
</tbody>
</table>

The most common factor that causes issues to be raised is inaccurate report delivery. We received a variety of responses, however, such as “talent issues” (Interview #6), “execution issues” (Interview #1), “client dissatisfaction” (Interviews #3, 10, & 17), “reputational risk” (Interview #10), “issues with audit and regulatory control” (Interview #14), and more. While these factors are not common among our interview population, they should not be dismissed, as they still affect the success and reputation of the Bank. Because of this, it is important that the OPAL application allows for the input of any issue, regardless of root cause.
**Question 3: Provide an example of an issue you may raise, and how you expect it to be resolved.**

The purpose of this question was to understand the ideal issue resolution process for each employee, regardless of the various issue management systems and methods in use. The responses allowed us to analyze desired workflow for issue management by examining functional gaps between user needs and existing system capabilities.

Following are four sample descriptions:

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>I see a number in a cost report that is out of line - I log it in a system that directs the issue to the right owner of the cost report workflow - the system gives a reference number and an e-mail link to help me keep track of the issue - some kind of dashboard is available to me to see status, progress on my issues. (No IM tools currently in use)</td>
</tr>
<tr>
<td>2</td>
<td>Produce report with errors - correction of errors - resend of report - documentation of required changes to avoid reoccurrence.</td>
</tr>
<tr>
<td>3</td>
<td>Issue identified - identify owner - discussion to agree upon the presence of an issue - action plan</td>
</tr>
<tr>
<td>4</td>
<td>Client is not receiving appropriate level of service - team managers discuss and plan actions to resolve - if problem persists, escalate with offshore head, discuss cause, why issue is persisting, come to a consensus as to how to go about resolution (No IM tool in use)</td>
</tr>
</tbody>
</table>

For this question, our interviewees provided a wide variety of examples with detailed resolution processes. Most agreed that there should exist an issue management tool that allows for them to raise an issue and track it to resolution. The issue management tool should provide employees associated with an issue the ability to oversee the entire resolution process, and in particular, should highlight the current action taking place to achieve resolution. A summary of the ideal issue resolution process consists of:

1. **Issue Identification:** An issue should be identified and documented either through manual entry into the system or through automatic system recognition.
2. Issue Analysis: Issue details such as priority level, impact, and desired time frame for resolution, should be specified upon documentation of an issue. A detailed action plan should also be included.

3. Issue Resolution: All actions taken towards achieving resolution should be documented in the issue management tool, including file exchange, an action statement, and additional commentary.

4. Issue Tracking: All users associated with an issue should have the ability to track its resolution. The system should also include pre-defined escalation rules.

5. Issue Closure: An issue needs to be fully resolved before it can be closed/ the system should document all steps leading up to closure to provide transparency.

**Question 4: What is the ideal time frame for issue resolution?**

The purpose of this question was to understand the average time frame over which an issue needs to be tracked to achieve resolution. The time frame affects other factors such as escalation.

Our interviewees provided two common answers:

<table>
<thead>
<tr>
<th>#</th>
<th>Ideal time frame</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Depends on issue type</td>
<td>7 out of 19</td>
</tr>
<tr>
<td>2</td>
<td>Within 24 hours</td>
<td>5 out of 19</td>
</tr>
</tbody>
</table>

While most interviewees stated that the resolution time frame depends on the issue type, they also indicated other key indicators of an appropriate time frame. Most interviewees agreed that a due date should be assigned to an issue upon its analysis, to ensure that it is resolved as soon as possible. On the contrary, some employees said that upon documentation of an issue, they would expect an acknowledgement of receipt (Interview #17) with an assessment of the time frame for resolution to follow within 24 hours. For issues related to risk, the system should
ask users to quantify the risk against a materiality grid (Interviews #7, 12, 19, & 21) in order to determine the resolution time frame.

**Question 5: What do you think is the ideal method through which to track the aging of an issue?**

This question asks users about the methods through which they would like to be notified of issue tracking updates, and under what circumstances. Currently, email and screen pop-ups are the primary methods for notification in OPAL, and this often provides users with an unmanageable number of alerts. The most commonly desired tracking notification methods are:

<table>
<thead>
<tr>
<th>Method</th>
<th>Description</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>System Notification</td>
<td>The issue management system automatically sends notifications to users through email and screen pop-ups</td>
<td>5 out of 18</td>
</tr>
<tr>
<td>Issue Library</td>
<td>For storage of all issues, regardless of issue status</td>
<td>4 out of 18</td>
</tr>
<tr>
<td>Dashboard</td>
<td>Upon system login, provides real-time visibility regarding issues in each user’s division</td>
<td>4 out of 18</td>
</tr>
</tbody>
</table>

In addition, interviewees stated some common “special requests” regarding notification types:

<table>
<thead>
<tr>
<th>#</th>
<th>Request</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>3 people mentioned that users should be able to track progress, rather than general status change.</td>
</tr>
<tr>
<td>2</td>
<td>3 people mentioned they receive too many emails everyday and would not like more email notifications.</td>
</tr>
<tr>
<td>3</td>
<td>2 people mentioned that other notification methods, such as pop-up screens and text messaging would be beneficial.</td>
</tr>
<tr>
<td>4</td>
<td>2 people mentioned users should be able to personalize their notification preferences.</td>
</tr>
</tbody>
</table>

The interviewees expressed strong opinions on the topic of issue tracking, indicating its importance. These “special requests” led to the identification of ideal notification methods and situation, and their design development in the mock screens.
**Question 6: What type, priority, or severity of issue needs to be escalated to a manager, and who qualifies?**

This question showed us the general desired escalation process, and is important because escalation is an essential part of the issue management workflow. Discussion regarding issue escalation addressed when, how, and to whom an issue should be escalated. The most common responses to Question 6 are:

### Table 15: Question 6

<table>
<thead>
<tr>
<th>#</th>
<th>Escalation Criteria</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Issues not resolved within the pre-defined time frame</td>
<td>9 out of 18</td>
</tr>
<tr>
<td>2</td>
<td>Need escalation hierarchy to decide the criteria</td>
<td>6 out of 18</td>
</tr>
</tbody>
</table>

The most common reason for escalation is that an issue is not resolved within the pre-defined timeframe. Other reasons include recurring root causes (Interview #5) and magnitude of financial impact (Interviews #4 & 19). Another one of the most common responses is the need for an established escalation matrix. This can lead to automatic escalation assignment and subsequent automatic escalation, thus expediting the resolution process.

**Question 7: What triggers the closure of an issue?**

Question 7 was asked in order to clarify who has the ability to close an issue, and under what criteria. The responses to this question indicate that there is no formal process for the closure of an issue; however, usually the issue raiser and owner must agree to the achieved resolution for the issue to be closed in the system by the issue raiser. If the parties cannot agree to resolution with the current resources available or within the pre-defined timeframe, the issue should be escalated to be closed or put “on hold” (Interview #20).
**Question 8: What metrics would you like to see displayed in summary upon login to OPAL?**

The responses provided to this question helped us capture the most frequently used and most important features in an issue management module. These responses contribute to the guidelines for the development of a dashboard summary page directed toward users’ needs and preferences.

Responses to this question fall into two categories:

1. **Issue Types for Summary:**

   **Table 16: Question 8a**

<table>
<thead>
<tr>
<th>#</th>
<th>Top Metrics for Summary</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Number of Issues Opened Today</td>
<td>10 out of 20</td>
</tr>
<tr>
<td>2</td>
<td>Number of Issues I Raised/Related to Me</td>
<td>6 out of 20</td>
</tr>
<tr>
<td>3</td>
<td>Number of Issues Opened This Week/Month</td>
<td>5 out of 20</td>
</tr>
</tbody>
</table>

   Employees would like to be able to see metrics only around certain issues, such as issues that they raised or are in their department. In addition to the above summary items, our interviews revealed that users of the OPAL issue management module would like a “trend analysis” function on the dashboard, offering an analysis of issue closure capability.

2. **Issue Metrics:**

   **Table 17: Question 8b**

<table>
<thead>
<tr>
<th>#</th>
<th>Issue Log Metrics</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Issue Raiser</td>
<td>8 out of 20</td>
</tr>
<tr>
<td>2</td>
<td>Aging (# of days open)</td>
<td>7 out of 20</td>
</tr>
<tr>
<td>3</td>
<td>Current Status with Progress</td>
<td>5 out of 20</td>
</tr>
<tr>
<td>4</td>
<td>Priority and Severity Level (Impact)</td>
<td>5 out of 20</td>
</tr>
</tbody>
</table>

   These metrics refer to the information pertaining to each issue in the issue management application. The four listed above are the most commonly requested metrics according to our interviews. These metrics should be available on the dashboard along with other mandatory issue information such as ticket number, issue name, and date the issue was raised.
Most interviewees also requested that all of these aspects of the issue management dashboard be customizable for each user. Such flexibility allows users to choose to view metrics that affect their daily tasks. For example, managers may be interested in seeing issues arranged according to region, while Financial Directors may prefer to see metrics only around issues that they raised, or that are new in their division.

**Question 9: When you need access to a related document, should it be attached to the issue, available upon request, or available through a search function?**

This question is aimed at further describing what information should be included with an issue in the issue management application. Interviewees simply stated that they would like any related documents to be directly attached to an issue. This is because the issue raiser has a responsibility to provide as much detail as possible surrounding an issue. However, some interviewees stated that they do not want to see such additional information on their dashboard or in their issue log if the issue is not related to them.

**Question 10: What other relevant pertinent information do you think should be included in the issue management module?**

This open-ended question was asked to reveal any additional information that users may want to see in an issue management module. Our responses ranged from pressing concerns to new ideas on the user’s long-term wish list. While the responses addressed a wide assortment of topics, the most common concern relates to the variety of issue management modules at Deutsche Bank and the lack of use and capabilities of each.
Deutsche Bank already uses twelve different issue management systems. Some users feel that none of the modules are entirely effective because they lack efficiency and cannot be used across divisions and/or borders. In addition, it is difficult to find a balance between making a simple phone call to report and resolve an issue, compared to having to document detailed information in a system, which may cause extended resolution time.

Suggestions to overcome this challenge include the integration of emails and issue management modules. Email integration would incorporate an issue identification application into DB email programs to allow for quicker entry of issues. Issue management module integration would either integrate or consolidate all issue management systems currently in use at the Bank, in order to eliminate double keying and lack of transparency.

Some of these concerns are more appropriate to approach in the long term rather than in the near future; however, these responses list valid suggestions that should not be dismissed without further investigation of feasibility and acceptance.

4.3 Summary

Analyzing both internal and external sources provides a comprehensive summary of issue management at Deutsche Bank as well as outside of the banking industry. This allowed us to leverage the key points from the research and interviews with confidence that we considered all a respectable summary of the practice of issue management. Upon completion of the analysis of our research and interviews, we compiled the best practices document based on the most essential and most common needs and suggestions for improvement.
Chapter 5: Best Practices and Mock Functional Screens

This chapter contains the best practices created as a compilation of our research and interviews. The research and interviews revealed functional gaps between user needs and system capabilities, and these best practices aim to close those gaps through suggestions for enhancements to the CIB Finance OPAL issue management application. The document also includes two mock functional screens that offer possible designs for the development of the functionality of the most essential guidelines stated.

In addition to stating the best practices, this document contains an abbreviated presentation of the overall Workflow and Issue Management project, in order to serve as a deliverable for the OPAL Finance Team at Deutsche Bank for reference. The full document is attached in Appendix E.

5.1 Best Practices

Issue Identification

- **Clear Issue Definition:** A clear and agreed upon definition of an issue and an incident should be available to all OPAL users. These terms have been defined in the “Issue Management Tool for Group Finance” Business Requirements Document [Appendix D]. The definitions should be available within the OPAL application and distributed to OPAL users for clarity. This will ensure that all users understand the purpose of the module.

- **Clear Rating Criteria:** Clear definitions of rating criteria (severity & priority) should be provided to OPAL users to ensure proper classification. These terms have also previously been defined in “Definitions of RAG, Risk, and Issue” [Appendix E], and should be available
within the OPAL application and distributed to OPAL users for reference. Such ratings are essential for task prioritization and escalation, and are ineffective if not used consistently.

- **Issue Recording:** All issues need to be recorded in an issue log (OPAL). This includes issues identified over the phone, over email, through personal review of a document, or any other method. Minor issues should not be overlooked, as there may be a root cause that needs to be addressed, and recording issues can help reveal root problems. All issues, upon recording, should also be assigned an identification number for tracking, referencing, and linking to other issues.

- **Email Integration:** Because of the volume of issues identified over email, OPAL should be integrated with email systems to allow for more efficient issue recording. This may be in the form of an “add-in” downloaded to the email program which displays a toolbar at the top of the email window with an option to raise an issue. The add-in will scan the email to pre-populate “add issue” fields within OPAL.

### Issue Analysis

- **Ownership Assignment:** The issue owner (responsible for issue resolution) should be clearly identified on the ticket, as this assignment should automatically trigger a notification to the owner stating that he or she has been assigned an issue. Ownership assignment clarifies responsibility for resolution of an issue. Assignment notifications make sure that the owner knows of his or her responsibility.

- **Related Issues:** The issue raiser should provide links to related issues so that associated or dependent issues can be examined simultaneously. Additionally, links also allow the issue owner to ask questions to the appropriate associated person. This may help identify a root cause of several issues. Resolution of the root cause helps to avoid future issues.
Additionally, the resolution of one issue may lead to the resolution of a dependent issue, and this association may not be recognized if the link is not provided.

- **Related Documents**: Links to related documents that the issue owner or raiser may need should be attached to the issue in order to expedite issue resolution. Searching for/requesting additional documents can cause delays in the resolution time. The issue raiser has a responsibility to provide as much detail as possible.

- **Issue Description**: The issue raiser needs to enter a description of the issue, stating the problem and possible methods for resolution. Again, the issue raiser needs to provide as much detail as possible to facilitate and expedite resolution. Pre-defined solutions inform the owner of precisely what needs to be done to reach resolution.

- **Due Date Assignment**: The issue raiser needs to assign a due date to the issue to ensure resolution is reached within an appropriate time frame. The due date confirms that the issue owner is aware of the required time frame for resolution. Additionally, the due date helps users track the aging of an issue: users can receive notifications for important upcoming due dates.

- **Escalation**: An escalation hierarchy should be established, and the ticket should clearly state the name of the individual responsible for the ticket upon escalation. Issues not resolved within the pre-defined time frame or that do not satisfy the SLA should be automatically escalated, based on the established escalation hierarchy. A pre-defined escalation matrix accelerates the resolution process by removing the need for manual approval to escalate.

**Action Steps**

- **Issue Action**: The issue log should state the point of action, or current efforts towards resolution. Users should be able to state the current progress of an issue, in addition to simply
whether the issue is open or closed. This should be included as an option to be shown on a user’s dashboard for quick viewing. For example, when raising an issue, the issue raiser may enter “PIP missing data, needs review,” so that the owner is aware of the necessary action to reach resolution.

- **Group Directory:** Names of individuals working on a given issue should be linked to the group directory. When assigning an issue, it should be possible to choose from the group directory. This enables users to ensure that they are assigning an issue to appropriate person or division.

**Issue Tracking**

- **Dashboard Summary:** Upon login to OPAL, a dashboard summarizing issues pertaining to the user and to his or her division should be displayed. The dashboard should be customizable according to each user’s personal preferences: users should be able to select the metrics around issues that they would like to see. This gives users quick access to only the information that is relevant to them. This accessibility may encourage users to utilize OPAL more actively and respond to requests in a more timely manner.

- **Notification Customization:** Notifications should be customizable according to each user’s personal preferences: users should be able to choose method of notification (email, pop-up, or text message) as well as reason for notification (i.e., issue updated). Because of the volume of notifications released, users often dismiss these announcements without reading or responding to them. With a decreased number of notifications, users may be more likely to direct their attention towards each one.

- **Trend Analysis:** The dashboard should offer a “trend analysis” graph to show progress of issue tracking (i.e. number of opened issues vs. number of closed issues in a given month).
As OPAL users have expressed an interest in a visualization of the success of issue resolution, the trend analysis should present a monthly, weekly or daily overview of issues opened and closed.

- **Search Function:** The Issue Management module should offer a search function to filter the issue log based on any given search terms. The ability to search past issues can help eliminate recurring issues by showing past resolution processes. Search capabilities also serve as a record of issue resolution confirmation, as well as lessons to illustrate proper resolution.

- **Tool Integration:** The OPAL issue management module should be linked to and interact with other issue management tools in use at DB in order to prevent the need to enter identical issues into more than one system. Currently, DB uses twelve different IM modules, which causes inefficient issue tracking and resolution. Integration among modules will allow users to continue to use their original interface while eliminating double keying.

- **Overdue Alerts:** The dashboard should include an aging alert function that attracts the user’s attention when a due date passes (an issue becomes overdue). Additionally, the issue should be automatically escalated upon alert. This is essential as users rely on due dates for issue tracking and escalation. Overdue issues need attention so as to avoid the development of further issues.

- **Knowledge Base:** Following issue resolution, the system should generate a standard form summary of the issue and record it in a central issue data base for future reference. Issue details should be available upon selection of a particular ticket. Such a “knowledge base” allows users to reference past issues as examples or for issue tracking purposes.
**Issue Closure**

- **Closure Rules:** A ticket should include closure rules that define the desired result that will trigger the closure of an issue. To close an issue, the raiser and owner should agree upon resolution. This ensures that both parties are aware of and agree to the terms upon which an issue is to be closed. Both the raiser and the owner need to be satisfied with the solution to an issue before it is closed to make certain that no subsequent issues follow.

- **Root Cause Identification:** If the issue identifies a larger root cause, a separate issue should be raised for resolution, and that issue should be linked to its related issues. This will lead to the resolution of all related issues, as well as eliminate the development of additional related issues. It is especially important that root cause issues are recorded, as they may be necessary for future reference should a related issue recur.

**5.2 Mock Functional Screens**

The screens can be considered as a base upon which to further develop additional features. These user interfaces illustrate the best practices that were developed from the most highly emphasized points addressed in our research and interviews.

**5.2.1 Dashboard User Interface**

The first user interface, shown below in Figure 3, illustrates the “dashboard,” or summary page displayed upon login to OPAL. The dashboard highlights the most critical aspects of a user’s workflow and tasks. These features are (Table 18):
### Table 18: Dashboard Features

<table>
<thead>
<tr>
<th>No.</th>
<th>Feature name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Personalized Summary</td>
<td>Summarize issues based on issue type and time period</td>
</tr>
<tr>
<td>2</td>
<td>Trend Analysis</td>
<td>Compare and evaluate daily, weekly or monthly performance</td>
</tr>
<tr>
<td>3</td>
<td>Issue Metrics</td>
<td>Displays common metrics upon login for a quick summary</td>
</tr>
<tr>
<td>4</td>
<td>Due Date Alert</td>
<td>Color of date turns red when issue becomes overdue; issue automatically escalated</td>
</tr>
<tr>
<td>5</td>
<td>Customization</td>
<td>Hide or add metrics according to user preferences (by right-clicking)</td>
</tr>
</tbody>
</table>
Figure 3: Dashboard User Interface

Feature 1: Personalized summary
Feature 2: Trend analysis showing comparison
Feature 3: Issue metrics
Feature 4: Due date alert: color is red when overdue
Feature 5: Customization: right-click to hide and add metrics
5.2.2 Personal Preferences User Interface

The second user interface designed is the “Personal Preferences” function. This option within the issue management module allows each user to customize his or her personal settings regarding notification alerts. The user has the ability to select the type of issue (e.g., personal or division-based), reasoning for notification (i.e., new issue is raised), and the method of notification (e.g., via email, pop-up, or text message). This interface is shown below in Figure 4.
**Figure 4: Personal Preferences User Interface**

![Personal Preferences User Interface](image)

<table>
<thead>
<tr>
<th>Date Due</th>
<th>Age</th>
<th>Status</th>
<th>Need Escalation?</th>
</tr>
</thead>
<tbody>
<tr>
<td>12/15/2011</td>
<td>0</td>
<td>Open</td>
<td></td>
</tr>
<tr>
<td>12/18/2011</td>
<td>1</td>
<td>Open</td>
<td></td>
</tr>
<tr>
<td>12/14/2011</td>
<td>2</td>
<td>Open</td>
<td></td>
</tr>
<tr>
<td>12/10/2011</td>
<td>6</td>
<td>Open</td>
<td></td>
</tr>
<tr>
<td>11/9/2011</td>
<td>37</td>
<td>Closed</td>
<td></td>
</tr>
</tbody>
</table>

**Personal Preferences**

- Notify me about:
  - All issues
  - My issues
  - Issues in my division
  - Marked issues

- Notify me when:
  - New issue is raised
  - Issue is updated or escalated
  - Issue is closed or put on hold

- Notify me through:
  - Email
  - Pop-up screen
  - Text message to: [ ]
Chapter 6: Recommendations

The best practices compiled in this report summarize our analysis of internal and external research as well as internal interviews with employees representing various divisions and global branches of Deutsche Bank. The best practices should be considered to be recommendations for the improvement of workflow and issue management within CIB Finance. The next step towards the production of such enhancements is to consider the implementation of the best practices. The recommendations can be divided into short-term and long-term categories:

6.1 Short Term Recommendations

The first step is to review and prioritize the best practices for implementation. As subject matter experts, the OPAL Finance Team should review and prioritize the best practices according to the most imminent needs and requests of users.

Upon prioritization of the best practices, the OPAL Finance Team should consult with the Information Technology (IT) division to investigate the feasibility of the implementation of additional features that reflect high priority functions. These additional functions should be built into the existing OPAL application. The user interfaces presented in this document should be shared with the IT division for reference as to the structure and functionality of select additional features.

6.2 Long Term Recommendations

In the long term, the integration of the OPAL application should be considered. There are three proposed aspects to this integration:
1. **Email integration**: DB email platforms (MS Outlook, LotusNotes) should incorporate an issue identification application to allow for issues raised over email to be entered immediately into the OPAL issue management module.

2. **Issue Management module integration**: The various issue management modules currently in use across the Bank should either be integrated to work together, or consolidated into one system to help eliminate the double keying of issues and the lack of transparency.

3. **Workflow integration**: Functionality should be designed within the OPAL application for the automatic generation of issues from the workflow into the issue management module.

This project considers a range of material and presents a wide variety of recommendations. Some are more appropriate for consideration in the immediate future, whereas the more substantial recommendations are appropriate for consideration for long term implementation. As mentioned, before implementing new features into the OPAL issue management module, the best practices offered in this project should be reviewed, consolidated with recommendations from other previously completed IM studies, categorized, and prioritized. Most importantly, the OPAL Finance Team should first investigate user acceptance and technological feasibility of each practice prior to its implementation.

Upon establishment of new features within the OPAL issue management module, the system should operate more efficiently, with a more user-friendly interface, and more effective issue identification, analysis, and closure techniques. Additionally, the improved system should provide greater financial and managerial transparency among Bank divisions and across borders.
References


14. Philips Modernizes Defect Tracking Capabilities with Deployment of Rational


Appendix A: Mission and Organization of Deutsche Bank AG

Deutsche Bank AG

Deutsche Bank was founded in Berlin, Germany in 1870 “to transact banking business of all kinds, in particular to promote and facilitate trade relations between Germany, other European countries, and overseas markets.” In its first few years, DB opened several other branches throughout Germany, and, soon after, opened its first European foreign branch in London in 1873. In 1880, DB began supplying the banking industry with loans and capital market products, and established foreign investments in North and South America, Eastern Asia, and Turkey. Deutsche entered retail banking in 1959 by introducing small personal loans. Later, in 1989, the Bank acquired Morgan Grenfell Group, thereby strengthening its position in the international securities business and expanding its presence on the important London capital market. Since then, DB has made several additional acquisitions, and currently streams revenues from its presence in over 70 countries. Major business hubs are located in Frankfurt, London, New York, Dubai, Singapore, and Tokyo. In its home country of Germany, Deutsche Bank is the banking industry leader, and in Europe, it is among the leading finance firms (Deutsche Bank At A Glance, 2011). DB now “competes to be the leading global provider of financial solutions, creating lasting value for [its] clients, [its] shareholders, [its] people and the communities in which [it] operates” (Deutsche Bank Mission and Brand, 2011).

As of 2010, Deutsche Bank is worth about 1,906 billion euros in total assets, and its total net revenue is about 28,567 million euros (Deutsche Bank At A Glance, 2011). The Bank operates under the framework of the German Stock Corporation Act and the German Corporate Governance Code. In addition, because DB’s share is listed on the New York Stock Exchange, the Bank respects the U.S. capital market laws, the rules of the Securities and Exchange

The corporate governance system at Deutsche Bank allows for responsible and effective management and control of the bank. To achieve the desired sustainable creation of value, the system has four key elements:

1. Good relations with shareholders,
2. Effective cooperation between the Management Board and Supervisory Board,
3. A performance-based compensation system with a sustainable and long-term focus, and
4. Transparent and timely reporting (Deutsche Bank At A Glance, 2011).

**Mission and Values**

As mentioned, the updated corporate mission at DB is to “compete to be the leading global provider of financial solutions, creating lasting value for our clients, our shareholders, our people and the communities in which we operate.” The DB brand focuses on performance, in business and beyond, with a unique mix of passion and precision. DB employees are passionate about their work, giving each task the time and attention to detail that it requires. Such devotion is what brings the Bank success.

Deutsche bank emphasizes five corporate values:

1. *Performance*: The Bank is committed to a result-oriented culture.
2. *Trust*: Employees behave reliably, fairly, and honestly.
3. *Teamwork*: The Bank benefits from the diversity of its business and its people by working together to achieve success.
4. Innovation: Employees are constantly challenging conventional wisdom and developing new solutions to meet customer requirements.

5. Client Focus: Customers are placed at the center of the Bank’s activities (Deutsche Bank At A Glance, 2011).

The goals and components of this project reflect Deutsche Bank’s mission, brand, and values. Throughout the duration of the project, we worked to enhance an operations module to provide employees with a more efficient way to track their efforts to serve each other, and ultimately, their clients. Such internal improvements to the corporation create success with clients.

Innovation was the root of our project, as we researched and interviewed to finally make suggestions for the enrichment of an existing technology platform. For each task within our project, we performed with passion to our best ability, focusing on both our goal to please the OPAL team as well as our goal to complete our MQP. As we became acclimated to the OPAL team environment, we learned that while individual tasks in the operations department may seem to only affect internal clients, the interworking of all modules within OPAL is client driven. We worked as a team, with each other as project partners as well as with our employee counterparts at Deutsche Bank. We found that in order to work effectively, we needed to trust each other to work responsibly and to provide our greatest effort.

The OPAL Team

During our term at Deutsche Bank, we worked alongside the OPAL team for CIB Finance. Our project liaison, Mr. Barry Zucker, sits as Director of the Global Markets Finance division. We performed our daily tasks under the guidance of Ms. Rajnarind Kaur, Vice President and Global Program Manager for Global Markets Finance, and Ms. Neelam Bansal, an
associate also in the Global Markets Finance division. We received additional assistance from Miss Lisa-Marie Fitzgerald, who first welcomed us to the project team. Lisa is the OPAL Project Manager within the Americas.
Appendix B: Issue Management Questionnaire

1. What is your definition of an issue/incident? What triggers an issue (e.g., email, manual entry, automatic)?

2. What are some common factors that may cause an issue to be raised? (i.e., expected information not included)

3. Provide an example of an issue you may raise, and how you expect it to be resolved.

4. Once an issue is raised, what do you think is the ideal time frame for resolution (without escalation)?

5. What do you think is an ideal method through which to track the aging of an issue?

6. What type (e.g. operational, technical), priority (RAG), or severity (high, medium, low) of issue needs to be escalated to a manager, and who qualifies?

7. What triggers the closure of an issue?

8. What metrics (e.g., number of open issues, number of closed issues, today’s new issues) would you like to see displayed in summary upon login to OPAL (i.e., in a dashboard ‘MyPage’ view)?

9. When you need access to a related document, should it be attached to the issue, available upon request, or available through the search function?

10. What other relevant pertinent information do you think should be included in the IM module?
1. **What is your definition of an issue/incident? What triggers an issue (e.g., email, manual entry, automatic)?**
   - Issue – something that impacts the team’s daily performance (in terms of quality and/or time/ability to deliver to the client). Requires action to be taken.
   - Incident – less serious. It is something that we need to be aware of, but is not a direct problem. Has happened, but it does not necessarily impact delivery.
   - Triggers: manual, email/phone (client wants something different; escalation), PRISM online dashboard (flags issues automatically), discussion forums (where people get together and discuss the problems), 30% JIRA, 70% weekly calls onshore/offshore
   - Ex.: receive information late, wrong information presented to a client, process stopped (due to indecision)

2. **What are some common factors that may cause an issue to be raised (i.e., expected information not included)?**
   - Late delivery/inaccurate delivery (from DART system)
   - People don’t follow instructions (execution issue) (i.e., new employees who don’t understand what needs to be included)
   - Poor offshore/onshore communication (unclear specification of what needs to be delivered, when, and how; onshore needs to more clearly explain expectations; 40% tasks are ad-hoc)

3. **Provide an example of an issue you may raise, and how you expect it to be resolved.**
   - Front Office Trading:
     - Traders: buy/sell – make $ (P&L)
     - Sales: help traders (no real P&L), revenue/sales credit shadowing P&L
   - If information is delivered to PSC late, there is less processing time at the PSC, and then PSC delivers late as well
   - Structured workflow: look for data, if it’s there…go, if not, escalate to manager immediately → announce delay to onshore personnel → assess impact and risk and communicate issues
   - IT resolution later
   - Why was it late? Avoid in the future

4. **Once an issue is raised, what do you think is the ideal time frame for resolution (without escalation)?**
   - Same day resolution
   - Missing data should be escalated within 2-3 hours, action plan instituted within 6 hours, risk assessment within 24 hours
5. **What type (e.g. operational, technical), priority (RAG status), or severity (high, medium, low) of an issue needs to be escalated to a manager, and who qualifies?**
   - Differs from onshore here. PSC has strict hierarchy/reporting techniques
   - Escalation depends on the quality assessment of the issue (non-standard issue means senior management is more involved)
   - Issues need to be escalated immediately, through the hierarchy

6. **What triggers the closure of an issue?**
   - Nothing in particular. Senior managers (Damian) have ultimate say
   - Need to reach onshore/offshore agreement (90% closed at weekly meeting)

7. **What metrics (e.g. number of open issues, number of closed issues, today’s new issues) would you like to see displayed in summary upon login to OPAL (i.e., in a dashboard ‘MyPage’ view)?**
   - Who raised the issue (name, department, seniority)
   - When raised (date, time)
   - Issue type (drop down)
   - Impact assessment (late report to client, quality impact, training with process issues)
   - Quality issues (offshore only? V&C?)
   - Value (cost $$, time) (pre-text format field with description)
   - Name of offshore team member associated (supervisor)
   - Is this a repeat issue?

8. **When you need access to a related document, should it be attached to the issue, available upon request, or available through the search function?**
   - There should be a direct attachment/link that can be clicked

9. **What do you think is an ideal method through which to track the aging of an issue?**
   - On a dashboard – instant updates

10. **What other relevant pertinent information do you think should be included in the Issue Management (IM) module?**
    - Our solution needs to be practical – a clear announcement of issues (dashboard) to attract the seriousness of an issue
    - Need a way to get attention quickly when management is receiving hundreds of emails daily, dealing with hundreds of people in multiple locations
    - Usability – reach out to clients at all levels
    - Text message? Vs. email
    - Consider onshore needs vs. offshore needs
1. **What is your definition of an issue/incident? What triggers an issue (e.g., email, manual entry, automatic)?**
   - Anyone can flag up an issue/incident
   - Issue – hasn’t yet had an impact
   - Incident – more serious than an issue. Something has happened as a result of an issue, but basically the same…
   - Part of a process flow/output → something is working improperly, is inaccurate, or delivered late…
   - Triggers: email

2. **What are some common factors that may cause an issue to be raised (i.e., expected information not included)?**
   - Reconciling a difference
   - Process not working
   - Result of output which highlights result
   - Management information
   - Email

3. **Provide an example of an issue you may raise, and how you expect it to be resolved.**
   - Reconciliation: variances above a certain age may be seen as issues as differences are not being resolved in a timely manner (→ escalation)

4. **Once an issue is raised, what do you think is the ideal time frame for resolution (without escalation)?**
   - Resolution time frame depends on the issue
   - Depends on frequency of issue, urgency of issue, and impact of issue

5. **What type (e.g. operational, technical), priority (RAG status), or severity (high, medium, low) of an issue needs to be escalated to a manager, and who qualifies?**
   - Priority and severity thresholds vary on issues and what you’re actually looking at
   - Could also be noted “critical,” “significant”

6. **What triggers the closure of an issue?**
   - Demonstration that the issue will not recur
   - Root cause fixed with mitigation action put in place
   - Some may say that you can close an issue prior to remediation sometimes (mitigate later)

7. **What metrics (e.g. number of open issues, number of closed issues, today’s new issues) would you like to see displayed in summary upon login to OPAL (i.e., in a dashboard ‘MyPage’ view)?**
Heat map/radar screen – show most important issues, ones that you need to be aware of immediately

Individual metrics (lower level):
  o Who’s addressing the issue
  o What issue
  o Current status
  o # open issues
  o How long has the issue been open

Higher level may not want to see such specifics
No interest in seeing the # of issues closed unless showing a trend (capability of closing items)

8. When you need access to a related document, should it be attached to the issue, available upon request, or available through the search function?
   Related documents attached (consider time and storage)
   Lower level: if you’re working on the issue, you want the appropriate items attached
   Upper level: summary only

9. What do you think is an ideal method through which to track the aging of an issue?
   Lower level: aging profile – depends on reasonable time frame for resolution
   Upper level: quick note (text message)

10. What other relevant pertinent information do you think should be included in the Issue Management (IM) module?
    Run a report – show # of issues raised this month on a particular PIP
        o Working on this in Cognos already…
1. **What is your definition of an issue/incident? What triggers an issue (e.g., email, manual entry, automatic)?**
   - Issue – not as critical. Impacts the SLA.
   - Incident – bigger, critical. Totally missed it.
   - Must consider service level agreement (SLA) from function (finance vs. GBS) AND department (offshore vs. onshore) – must be defined and agreed to with all partners
   - I/I is anything that does not meet the predefined SLA
   - Triggers: (3 level engagement)
     - Operational: end-of-day summary email
     - Weekly Review: items outstanding → 1 week → need to be escalated
     - Monthly Review: larger broken items (fix a root cause?)

2. **What are some common factors that may cause an issue to be raised (i.e., expected information not included)?**
   - Typo (wrong numbers)
   - Misread report
   - No communication back to offshore
   - Amend KOP (Key Operating Procedure)
   - Quantitative: late delivery; client expectation (does it meet? Yes/no)
   - Qualitative: does not meet SLA – on what level?

3. **Provide an example of an issue you may raise, and how you expect it to be resolved.**
   - Find cause and get it checked through three operation levels: daily, weekly, monthly

4. **Once an issue is raised, what do you think is the ideal time frame for resolution (without escalation)?**
   - Depends on the root cause and type of issue
   - Operational level – should be quick and simple – somebody deals with it immediately (i.e., IT); no need to escalate
   - Otherwise – 1 day → week → month → question why… KOP wrong? Fix root cause.

5. **What do you think is an ideal method through which to track the aging of an issue?**
   - Workflow driven (IT) – sort it out there (i.e., password reset)
   - Track/monitor outstanding issues in a database/issue library (can update, produce report)
     - Provide updates
     - Provide action items
6. What type (e.g. operational, technical), priority (RAG status), or severity (high, medium, low) of an issue needs to be escalated to a manager, and who qualifies?
   - 3 day threshold: exceeded or potential to exceed → escalate

7. What triggers the closure of an issue?
   - Issue owner or stakeholders are responsible and must agree to closure of an issue
   - Disagreements to monthly forum → action steps to completion
   - Operational: workflow issue → fix → test → confirm

8. What metrics (e.g. number of open issues, number of closed issues, today’s new issues) would you like to see displayed in summary upon login to OPAL (i.e., in a dashboard ‘MyPage’ view)?
   - # open issues
   - Who raised issue
   - # issues raised this month
   - 15-20 KRI(s) (trending and standard view)
   - How long to resolve
   - Need ability/flexibility to customize this view

9. When you need access to a related document, should it be attached to the issue, available upon request, or available through the search function?
   - Flexible

10. What other relevant pertinent information do you think should be included in the Issue Management (IM) module?
    - Difficult to find the balance between picking up the phone (as this may be simpler) to discuss issue resolution rather than documenting everything in OPAL (more tedious?)
1. What is your definition of an issue/incident? What triggers an issue (e.g., email, manual entry, automatic)?
   - Issue – break in reconciliation system (no delivery on reconciliation; know why, but no action; don’t know why)
     - Need to make sure that trades are valued correctly (this is what “finance” does) – this requires reconciliations
   - Incident – recurring issue within a control environment
   - Triggers (how is an issue communicated to you):
     - Intuition that there should be a reconciliation
     - Email
     - OPAL
     - Check drive
     - Rarely system generated

2. What are some common factors that may cause an issue to be raised? (i.e., expected information not included)
   - Lack of reconciliation

3. Provide an example of an issue you may raise, and how you expect it to be resolved.
   - No reconciliation of FO FX exposure (trade not accurately reflected in general ledger)
   - Resolution: expect a reconciliation to be put in place

4. Once an issue is raised, what do you think is the ideal time frame for resolution (without escalation)?
   - Need a receipt within 3-4 hours stating point of action, estimated time frame

5. What do you think is an ideal method through which to track the aging of an issue?
   - Personalized

6. What type (e.g. operational, technical), priority (RAG), or severity (high, medium, low) of issue needs to be escalated to a manager, and who qualifies?
   - Poses danger to the bank – big enough to merit the attention of senior management
   - Rank according to financial impact:
     - >$3-4M
     - >$10M → Senior MDs

7. What triggers the closure of an issue?
   - Issue reconciled
8. What metrics (e.g., number of open issues, number of closed issues, today’s new issues) would you like to see displayed in summary upon login to OPAL (i.e., in a dashboard ‘MyPage’ view)?

- How many traders signed off/did not sign off on P&Ls
- Number of cash breaks (aging, amount, business, product)
- Number of PV adjustments (aging, amount, business, product)
- Daily/MTD/YTD P&L
- Traders’ flash P&L @ end of day
  - Compare flash to next day actual… >$2M difference requires attention
- PSE (PFE?) balance in ledger (aged)
  - Can’t reconcile made or lost profit
- Unsigned documents (legal agreements made with traders)
  - > 30 days requires attention
- IPV (independent price verification) variance across businesses
- Top 5 Risks by credit curve by business
- Total size of BS (and how much did it move from the day before)
- How much capital used (and subcomponents)

9. When you need access to a related document, should it be attached to the issue, available upon request, or available through the search function?

- …

10. Super-user: As you were involved in the UAT, what enhancements can you suggest?

- None, need more time to use it
1. What is your definition of an issue/incident? What triggers an issue (e.g., email, manual entry, automatic)?
   - Issue /Incident – directly impacts you on a daily basis (e.g., trust entities lending to affiliates)

2. What are some common factors that may cause an issue to be raised? (i.e., expected information not included)
   - Issue curve or P&L doesn’t match what we know
   - System Issues
   - Made-up numbers
   - Incorrectly estimated

3. Provide an example of an issue you may raise, and how you expect it to be resolved.
   - Converging USGAAP + IFRS
   - Find out possible impact to firm/business with action plans
   - P&L: verify if it is correct

4. Once an issue is raised, what do you think is the ideal time frame for resolution (without escalation)?
   - Usually 24 hours

5. What do you think is an ideal method through which to track the aging of an issue?
   - Central issue report system (repository) where everyone can log-in to check
   - Weekly issue tracking – what is resolved; if not, why it is still outstanding

6. What type (e.g. operational, technical), priority (RAG), or severity (high, medium, low) of issue needs to be escalated to a manager, and who qualifies?
   - A trending issue – if a pattern develops, identify and (possibly) escalate
   - Recurring root cause
   - Loss goes over pre-defined limit

7. What triggers the closure of an issue?
   - Issue cause is fixed and the person who raised the issue is comfortable with closure
   - Management is not necessarily involved

8. What metrics (e.g., number of open issues, number of closed issues, today’s new issues) would you like to see displayed in summary upon login to OPAL (i.e., in a dashboard ‘MyPage’ view)?
   - 4 Management KPIs (for week’s P&L)
     o Timing
9. When you need access to a related document, should it be attached to the issue, available upon request, or available through the search function?
   ➢ …

10. *Super-user:* As you were involved in the UAT, what enhancements can you suggest?
    ➢ None
1. What is your definition of an issue/incident? What triggers an issue (e.g., email, manual entry, automatic)?
   - N/A – issue/incident tracking is not necessarily needed in Analytics division – it’s not a production environment; issues are more ad-hoc
   - An incident may pertain to offshore, system issues (this is a preclusion of obtaining data)

2. What are some common factors that may cause an issue to be raised? (i.e., expected information not included)
   - Unlinked systems – data cannot be connected from application to application
   - Data integrity and quality
   - Question raised directly from colleagues
   - Talent issue
   - Upstream owner of applications doesn’t keep end client in mind
   - No detailed granular data level within system (needed to solve the problem)
   - Credibility issue

3. Provide an example of an issue you may raise, and how you expect it to be resolved.
   - Issue identified → identify owner → discussion to agree upon the presence of an issues → action plan for owners

4. Once an issue is raised, what do you think is the ideal time frame for resolution (without escalation)?
   - N/A

5. What do you think is an ideal method through which to track the aging of an issue?
   - N/A

6. What type (e.g. operational, technical), priority (RAG), or severity (high, medium, low) of issue needs to be escalated to a manager, and who qualifies?
   - Integrity of mapping – escalate to management or owners of the issue
   - An issue on a very granular/detailed level

7. What triggers the closure of an issue?
   - Individual gives transparency on an issue → reach agreement among parties

8. What metrics (e.g., number of open issues, number of closed issues, today’s new issues) would you like to see displayed in summary upon login to OPAL (i.e., in a dashboard ‘MyPage’ view)?
   - In Analytics, metrics are different than, say, V&C…
➢ System outages, processing problems, and timely delivery are important to see but a dashboard is not likely the best solution for awareness (these big issues do not/should not enter an IM module); Usually, call directly and discuss

9. When you need access to a related document, should it be attached to the issue, available upon request, or available through the search function?
   ➢ ...

10. What other relevant pertinent information do you think should be included in the Issue Management (IM) module?
    ➢ ...

Interview #7
Thursday, November 10, 2011, 10am

1. What is your definition of an issue/incident? What triggers an issue (e.g., email, manual entry, automatic)?

   Any output that I review/V&C that looks out of place against my expectations
   Trigger = someone’s review
   If the question is how do I want to record then I would say via a simple online entry screen with a clear indication of who is next in the workflow

   Ø Issue – has yet to happen (risk)
   Ø Incident – has happened (more mechanical)
   Ø Triggers – email, manual entry
     o Summary of an action plan and material grid is needed to estimate the likelihood of something happening
   Ø Operational Risk – Ian Cox
     o Working with self-identified issues (proactively seeking risks)
     o Work alongside GBS to create list of risks
       ▪ Enter into dbTrack (audit system)
       ▪ Consider “What might happen if…”
       ▪ Agreement requires an action plan – make somebody accountable for working on an issue (assign ownership) and providing updates

2. What are some common factors that may cause an issue to be raised (i.e., expected information not included)?

   Too broad to answer – see my answers for 1 and 3

3. Provide an example of an issue you may raise, and how you expect it to be resolved.

   I see a number in a cost report that is out of line – I log it in a system that directs the issue to the right owner of the cost report workflow – The system gives me a reference number and an e-mail link to help me keep track of the issue – Some kind of dashboard is available to me to see status, progress on my issues

   Ø This is an ideal process
   Ø Currently no existing IM tool used personally

4. Once an issue is raised, what do you think is the ideal time frame for resolution (without escalation)?

   Depends – a good issue management system will ask the user quantify the risk against a materiality grid and resolution timeline (i.e. Qn 5). The best way to do this is to make a step in the process whereby the person assigned the issue confirms they agree/understand the ‘rating’ which includes timeline.

   Ø Timeline depends on the estimated agreement upon threshold, for everyone involved in the issue
Materiality grid: establish “rules of the road” – guidelines/regulations for everyone to abide by
  - Assess what’s going wrong at a certain level (error, critical or not, risks)

5. What type (e.g. operational, technical), priority (RAG status), or severity (high, medium, low) of an issue needs to be escalated to a manager, and who qualifies?

   Issues not resolved by agreed timeline – transparency of escalation path needed

6. What triggers the closure of an issue?

   The person who raised it is satisfied with the resolution and not before – no-one but the raiser should be able to close issues

7. What metrics (e.g. number of open issues, number of closed issues, today’s new issues) would you like to see displayed in summary upon login to OPAL (i.e., in a dashboard ‘MyPage’ view)?

   As Qn 3 and Qn 10 – JIRA is quite good here

   Depends on the person
   - For himself, simply wants to know that the issue is being resolved – status/progress
   - For PSC (Manila), more specific real-time details

   Look at metrics out of JIRA

8. When you need access to a related document, should it be attached to the issue, available upon request, or available through the search function?

   Attached – issue raisers get grumpy if it takes too long to find reference material - key here is that the issue raiser has a responsibility to provide as much detail as possible up front.

9. What do you think is an ideal method through which to track the aging of an issue?

   Days since raised and then days past agreed due date

10. What other relevant pertinent information do you think should be included in the Issue Management (IM) module?

    I would encourage you to review JIRA issue management system – it is not ideal in places but contains most of the design points I refer to above. This system is used for Finance onshore: Finance PSC issue management

*Italics indicates Andy’s written responses.*
1. What is your definition of an issue/incident? What triggers an issue (e.g., email, manual entry, automatic)?
   - Issue – generic problem within a process (e.g., GBS didn’t deliver PIPs)
   - Issues sometimes never go away – need to be regularly corrected (i.e., typo?)
   - Incident – small scale one-time event that usually FDs don’t deal with. E.g., system down, number wrong, GBS deliver 1 day late.
   - Triggers: email, verbally
   - COO is more of an oversight role – hear of issues second-hand

2. What are some common factors that may cause an issue to be raised? (i.e., expected information not included)
   - Late delivery
   - Inaccurate delivery
   - Incorrect numbers

3. Provide an example of an issue you may raise, and how you expect it to be resolved.
   - Ideal process should include direction/assignee

4. Once an issue is raised, what do you think is the ideal time frame for resolution (without escalation)?
   - Depends on the scale and nature of an issue – two years or two hours

5. What do you think is an ideal method through which to track the aging of an issue?
   - An issue needs to be dated when first raised
   - Include deadline
   - Control allocation of issue – get name of assignee and make them aware (ownership issue is more important)
   - Pop-up screens might be helpful, but should be limited to conditions such as when OPAL is open
   - Keep out of email – too many…they will be ignored

6. What type (e.g., operational, technical), priority (RAG), or severity (high, medium, low) of issue needs to be escalated to a manager, and who qualifies?
   - …

7. What triggers the closure of an issue?
   - Confirmation from owner that issue is resolved
   - Owner and issue raiser should be in agreement

8. What metrics (e.g., number of open issues, number of closed issues, today’s new issues) would you like to see displayed in summary upon login to OPAL (i.e., in a dashboard ‘MyPage’ view)?
Metrics relevant to me
  o I raised
  o Specific to my business/area
  o Operational risk to my function

As a COO – want to see progress – aging, trends – show that value is being added
As an FD – want to see significant events that inhibit V&C
Ability and flexibility to choose different options/customize (on a daily basis?)
Show level of engagement

9. When you need access to a related document, should it be attached to the issue, available upon request, or available through the search function?
   …

10. What other relevant pertinent information do you think should be included in the Issue Management (IM) module?
    ➢ Want CIB reporting available to me through OPAL, including different locations
       o Overview of issues that are going on in CIB (see a trend – COGNOS)
    ➢ Need to add value, not just track issues (more engagement and communication)
    ➢ User friendly, aesthetically pleasing
    ➢ Attract attention
1. What is your definition of an issue/incident? What triggers an issue (e.g., email, manual entry, automatic)?
   - Issue – unexpected; miscommunication; risk
   - Incident – something went wrong; it’s permanent

2. What are some common factors that may cause an issue to be raised (i.e., expected information not included)?
   - Miscommunication
   - Expected information or result not delivered

3. Provide an example of an issue you may raise, and how you expect it to be resolved.
   - P&L: expect +$1M, lose $5M

4. Once an issue is raised, what do you think is the ideal time frame for resolution (without escalation)?
   - 1 week… sooner is better

5. What do you think is an ideal method through which to track the aging of an issue?
   - Current method in OPAL – when the status changes, an update should be sent

6. What type (e.g. operational, technical), priority (RAG status), or severity (high, medium, low) of an issue needs to be escalated to a manager, and who qualifies?
   - Depends on how big the issue is (monetarily)

7. What triggers the closure of an issue?
   - P&L goes through – sign-off (agreement among people involved)

8. What metrics (e.g. number of open issues, number of closed issues, today’s new issues) would you like to see displayed in summary upon login to OPAL (i.e., in a dashboard ‘MyPage’ view)?
   - Number of issues
   - Aging
   - $ amount
   - Priority of the issue
   - Commentary (click on it for more information – to open the issue on your screen)
   - Should be customizable

9. When you need access to a related document, should it be attached to the issue, available upon request, or available through the search function?
   - Related documents should be accessible directly from the dashboard – click to open on your screen
10. What other relevant pertinent information do you think should be included in the Issue Management (IM) module?
   ➢ N/A
1. **What is your definition of an issue/incident? What triggers an issue (e.g., email, manual entry, automatic)?**
   - Issue – anything where a client reaches out to OPAL team in GBS
     - Also proactive queries (GBS reaches out to client to address potential issues)
     - Also internal queries
   - Incident – no difference for GBS – severity level of issue should clarify level of criticality
   - Severity level entered by individual who enters issue
     - S1
     - S2
     - S3
   - Triggers:
     - Email
     - Phone
     - Auto-generated (email integration)
     - Would ultimately like to be able to feed other systems into OPAL

2. **What are some common factors that may cause an issue to be raised? (i.e., expected information not included)**
   - S1: reputational risk for DB; operational loss; client looking to leave
   - S2: constant problem of not receiving confirmation/overdue reports (escalated)
   - S3: client missing confirmation (least critical)

3. **Provide an example of an issue you may raise, and how you expect it to be resolved.**
   - See Q1

4. **Once an issue is raised, what do you think is the ideal time frame for resolution (without escalation)?**
   - Depends on issue type (note KPI around issue resolution time)
   - Usually within 24 hours/1 business day… Some departments’ issue types may take longer to resolve

5. **What do you think is an ideal method through which to track the aging of an issue?**
   - Alert in system when an S1 is raised
   - System pop-ups
   - Limitation: must log in to OPAL to receive pop-ups
   - Text messaging (for travel use) may be beneficial
   - Personal preferences – do you want emails or pop-ups?

6. **What type (e.g. operational, technical), priority (RAG), or severity (high, medium, low) of issue needs to be escalated to a manager, and who qualifies?**
7. **What triggers the closure of an issue?**
   - Issue owner/originator is responsible for closing the issue after it is resolved
   - If an issue is assigned out to another department, after an agreement of all parties (mark as resolved), owner will close the issue
   - Issue needs to return to originator prior to closure, because issue originator is in contact with the client, and the client’s satisfaction is needed for closure

8. **What metrics (e.g., number of open issues, number of closed issues, today’s new issues) would you like to see displayed in summary upon login to OPAL (i.e., in a dashboard ‘MyPage’ view)?**
   - Number of issues new today
   - Number of issues assigned to individual
   - Number of issues overdue
   - Client-based GBS people want to see all issues related to a specific client
   - Issue-based GBS people want to see all issues that they must deal with

9. **When you need access to a related document, should it be attached to the issue, available upon request, or available through the search function?**
   - Click for access

10. **What other relevant pertinent information do you think should be included in the Issue Management (IM) module?**
    - Advanced email: a system that can auto-generate issues triggered through emails into OPAL; responses made in OPAL so tracking of issue is maintained
    - Feed other systems into OPAL
    - Example: trade details – can be tracked in OPAL with a reference number and with auto populated source information linked to it
Interview #11  
Tuesday, November 15, 2011, 9:30pm

1. **What is your definition of an issue/incident? What triggers an issue (e.g., email, manual entry, automatic)?**
   - Only deals with issue in RTB production
   - Issue – predictable
   - Incident – something has happened due to errors

2. **What are some common factors that may cause an issue to be raised? (i.e., expected information not included)**
   - Any problem in production world

3. **Provide an example of an issue you may raise, and how you expect it to be resolved.**
   - Human oversight
   - Issue – potential risk, regulatory impact
   - Incident – IT system not working properly, human mistake

4. **Once an issue is raised, what do you think is the ideal time frame for resolution (without escalation)?**
   - Depends on the scope and the scale of the project
   - Large scale issues are usually resolved within 30 days
   - Usually don’t set time frame, but set inspection point
   - Daily issues with P&L, IT issues should be resolved within 24 hours
   - Because issues tend to cut across many functions, discussion takes time

5. **What do you think is an ideal method through which to track the aging of an issue?**
   - RAG status not enough…
   - For overdue issues, still need to prioritize it into high medium low
   - Hard issue – big impact / Soft issue – small impact
   - Issue owners should do follow up actions

6. **What type (e.g. operational, technical), priority (RAG), or severity (high, medium, low) of issue needs to be escalated to a manager, and who qualifies?**
   - Issues are always escalated (inc. issues not solved within certain time frame)
   - Usually high priority, amber and red RAG status will be escalated to the proper level

7. **What triggers the closure of an issue?**
   - Remediation fully satisfied
   - If an issues cannot be remediated in a short amount of time, decide on a “tactical approach” and close the issue until a solution is established -- Issue not entirely solved but management agreed to close it
8. What metrics (e.g., number of open issues, number of closed issues, today’s new issues) would you like to see displayed in summary upon login to OPAL (i.e., in a dashboard ‘MyPage’ view)?
   ➢ N/A

9. When you need access to a related document, should it be attached to the issue, available upon request, or available through the search function?
   ➢ ... 

10. What other relevant pertinent information do you think should be included in the Issue Management (IM) module?
    ➢ Now: only track issue in production (GBS ↔ FD)... the module should extend to other issues, regulators, inspections and other production activities
1. **What is your definition of an issue/incident? What triggers an issue (e.g., email, manual entry, automatic)?**
   - Issue – long-standing chronic problem, lacking something in P&L or trade; structural problem within OPAL; see a repeatedly outstanding problem unresolved → material impact
   - Incident – one-time, ad-hoc problem
   - Triggers: Email and phone

2. **What are some common factors that may cause an issue to be raised? (i.e., expected information not included)**
   - …

3. **Provide an example of an issue you may raise, and how you expect it to be resolved.**
   - …

4. **Once an issue is raised, what do you think is the ideal time frame for resolution (without escalation)?**
   - Preferred as soon as possible
   - Issues w/a material impact: in a day
   - Issues w/a structural impact: in a week

5. **What do you think is an ideal method through which to track the aging of an issue?**
   - Within IM module
   - Alert board, dashboard to track status and KPIs

6. **What type (e.g. operational, technical), priority (RAG), or severity (high, medium, low) of issue needs to be escalated to a manager, and who qualifies?**
   - Escalation occurs through email
   - Escalation depends on materiality of item (P&L or balance sheet impact)
   - Depends on age of item (very old or not being addressed by colleagues)

7. **What triggers the closure of an issue?**
   - Person to whom the issue was assigned
   - No formal process – ad-hoc

8. **What metrics (e.g., number of open issues, number of closed issues, today’s new issues) would you like to see displayed in summary upon login to OPAL (i.e., in a dashboard ‘MyPage’ view)?**
   - Number of open issues, closed issues, new today
   - Issues in progress
   - Who is delegated to resolve the issue
   - In order of priority
9. When you need access to a related document, should it be attached to the issue, available upon request, or available through the search function?
   - Attached

10. What other relevant pertinent information do you think should be included in the Issue Management (IM) module?
   - …
1. What is your definition of an issue/incident? What triggers an issue (e.g., email, manual entry, automatic)?

   **Incident** = unplanned process interruption that leads to a deviation from the agreed output

   **Issue** = potentially recurring (of similar nature) or severe incident = chronic or substantial incident

   (note: to keep it easier to read this guideline uses the general expression “issue” also including “incidents”, instead of always including “issue and incident”. Wherever required, the limitation on issues in above defined meaning is explicitly mentioned)

   Minimum criteria in which an issue must be raised:
   1. KPI is red or amber
   2. for every flowback (work which needs to be done onshore again)
   3. if issues significantly impact timeliness, quality and volume

   **Trigger:** email, manual or automatic entry in issue management system

2. What are some common factors that may cause an issue to be raised (i.e., expected information not included)?

   Input data not available in time, Input data incorrect, Output not available in time, Output incorrect, Process delayed or broken

3. Provide an example of an issue you may raise, and how you expect it to be resolved.

   Produced Report with errors – correction of errors, resend of report, documentation of required changes to avoid reoccurrence

4. Once an issue is raised, what do you think is the ideal time frame for resolution (without escalation)?

   Resolution before or on due date/time, due date depending on urgency of resolution

5. What do you think is an ideal method through which to track the aging of an issue?

   Aging on creation date and due date.
   - Email to show progress
6. What type (e.g. operational, technical), priority (RAG status), or severity (high, medium, low) of an issue needs to be escalated to a manager, and who qualifies?

*Overdue issues to Team Leads, Important or Critical Issues to senior manager, Issues with material impact on production schedule to senior manager – priority and severity can be set by reporter and reviewed by supervisor/team lead – escalation by sourcing / business manager as appropriate."

7. What triggers the closure of an issue?

*Root cause identified and addressed, Issue resolved and Resolution documented

- Agreement between the issue raiser and issue solver
- “I decide”

8. What metrics (e.g. number of open issues, number of closed issues, today’s new issues) would you like to see displayed in summary upon login to OPAL (i.e., in a dashboard ‘MyPage’ view)?

*All pending issues with current status for me (my team) sorted by priority/severity and due date, today’s new issues for me (my team), issue statistics (no. open, closed, overdue issues) for managers

- Needs to be flexible/customizable

9. When you need access to a related document, should it be attached to the issue, available upon request, or available through the search function?

*Related documents should be attached to the issue if it is an issue description / screen shot. In correct reports etc should be stored on their regular place (shared drive, sharepoint, etc)."

10. What other relevant pertinent information do you think should be included in the Issue Management (IM) module?

*Reporter, Assignee, Supervisor, issue status, work stream, team, issue category, country, priority, severity, due date and time, escalation level, progress steps, resolution plan, root cause analysis, resolution documentation, time spent for resolution, history of the ticket

*Requirements for Issue Management:

- Overview of Issues
- Workflow for Issue resolution incl. escalation based on set rules
- Reports for Team Members, Team Lead, Senior Manager
- Filter option on current and past issues
- Download of reports/filter to excel for further analysis

➢ Issue log – ability to search past issues
Interview #14
Wednesday, November 16, 2011, 12pm

1. What is your definition of an issue/incident? What triggers an issue (e.g., email, manual entry, automatic)?
   - Risks that reach a certain level become an issue
   - Issue
     - (Operational) risk issue – impact bank (e.g., financial, regulatory)
     - Operations issue – does not directly impact the bank as a whole (e.g, GBS doesn’t provide FD with PIPs)
   - Incident – event that has occurred, crystallization of a risk/issue
   - Trigger:
     - dbTrack – self-raising
     - dbAware – audit
     - Usually, an issue is raised through system or financial spreadsheet
   - Must have action plan, target date and impact level

2. What are some common factors that may cause an issue to be raised? (i.e., expected information not included)
   - …

3. Provide an example of an issue you may raise, and how you expect it to be resolved.
   - Audit
   - Regulatory

4. Once an issue is raised, what do you think is the ideal time frame for resolution (without escalation)?
   - Not generally defined
   - Risk-related issues: 12 months (action plan completed), if over 12 month , the bank wants to know why
   - Active risk decision to accept timeframe; allow prioritization
   - Require action plan, allocate resources

5. What do you think is an ideal method through which to track the aging of an issue?
   - Wants to see progress
   - Prefer to track through a system (to pull a monthly/ad-hoc report), rather than email/notification status updates

6. What type (e.g. operational, technical), priority (RAG), or severity (high, medium, low) of issue needs to be escalated to a manager, and who qualifies?
   - No standard policy
   - Red and Amber may indicate additional risk

7. What triggers the closure of an issue?
 ➢ For a risk issue – agreement between FD + FDBM + OpRisk Team (must be comfortable with final action taken) + auditors, regulators

8. What metrics (e.g., number of open issues, number of closed issues, today’s new issues) would you like to see displayed in summary upon login to OPAL (i.e., in a dashboard ‘MyPage’ view)?
   ➢ Number of issues due this month
   ➢ Number of issues overdue
   ➢ Number not updated this month
   ➢ Graph showing trend of overdue issues within past 12 months

9. When you need access to a related document, should it be attached to the issue, available upon request, or available through the search function?
   ➢ …

10. What other relevant pertinent information do you think should be included in the Issue Management (IM) module?
    ➢ All issues in dbTrack… as per Cannon
1. What is your definition of an issue/incident? What triggers an issue (e.g., email, manual entry, automatic)?
   - Issue – KPIs missed/delayed, quality/timing problem
     - Day-to-day work
   - Incident – basically the same – issue can turn into an incident

2. What are some common factors that may cause an issue to be raised? (i.e., expected information not included)
   - ...

3. Provide an example of an issue you may raise, and how you expect it to be resolved.
   - ...

4. Once an issue is raised, what do you think is the ideal time frame for resolution (without escalation)?
   - Depends on the issue type
     - Top priority issues – 1 day
   - Delivery date can be next day or 2 hours
   - IT dependent issues - reliance on another person – may cause delays
   - Raiser and owner should agree on a time frame for resolution

5. What do you think is an ideal method through which to track the aging of an issue?
   - In JIRA, email is used

6. What type (e.g. operational, technical), priority (RAG), or severity (high, medium, low) of issue needs to be escalated to a manager, and who qualifies?
   - Depends on severity level: S1-S4
     - S4: Issue stays within immediate team
     - S3: Escalate to supervisor
     - S2: Escalate to sourcing manager
     - S1: Escalate to director

7. What triggers the closure of an issue?
   - Based on satisfaction of person who raised issue (opener should close)

8. What metrics (e.g., number of open issues, number of closed issues, today’s new issues) would you like to see displayed in summary upon login to OPAL (i.e., in a dashboard ‘MyPage’ view)?
   - Issues assigned to you
   - Issues you raised
   - Graphs show aging
   - Number of issues raised over time
- Supervisor/manager: all issues open under your team
- MD: department breakdown of teams’ issues
- Severity level
- Trend Analysis (team specific)

9. When you need access to a related document, should it be attached to the issue, available upon request, or available through the search function?
   - …

10. What other relevant pertinent information do you think should be included in the Issue Management (IM) module?
    - IM module should be integrated into workflow module (unlike in JIRA) so that issues are automatically linked to WF
Interview #16  
_Thursday, November 17, 2011, 9:30am_

1. **What is your definition of an issue/incident? What triggers an issue (e.g., email, manual entry, automatic)?**
   - Issue – something is booked late, wrong, not fixed (and will impact business)
   - Trigger: Phone and email first, if not resolved, then raise in JIRA

2. **What are some common factors that may cause an issue to be raised? (i.e., expected information not included)**
   - Something hasn’t been booked
   - Something was booked/recorded incorrectly

3. **Provide an example of an issue you may raise, and how you expect it to be resolved.**
   - ...

4. **Once an issue is raised, what do you think is the ideal time frame for resolution (without escalation)?**
   - Depends on issue types
   - Once time frame is set, that does not guarantee that issue will be resolved on time
   - Supposed to be automatically escalated if overdue (but this does not necessarily happen)

5. **What do you think is an ideal method through which to track the aging of an issue?**
   - Track the status of an issue (in dashboard)
     - “submitted”
     - “in progress”
     - “closed”
   - Too many emails… not an ideal method
   - Dashboard alert should show last time updated (instead of email)

6. **What type (e.g. operational, technical), priority (RAG), or severity (high, medium, low) of issue needs to be escalated to a manager, and who qualifies?**
   - Auto-escalation matrix (automatically escalate when overdue)
   - Manual escalation

7. **What triggers the closure of an issue?**
   - Agreement is difficult to achieve (prior method… since changed)
     - Before, issue raiser had to agree to close, but tended not to go in and close issues (unclosed issues accumulate)
   - Now, issue owner closes the issue upon its resolution

8. **What metrics (e.g., number of open issues, number of closed issues, today’s new issues) would you like to see displayed in summary upon login to OPAL (i.e., in a dashboard ‘MyPage’ view)?**
Issues you raised
Last time issues were updated

9. When you need access to a related document, should it be attached to the issue, available upon request, or available through the search function?
   ... 

10. What other relevant pertinent information do you think should be included in the Issue Management (IM) module?
    - Concern: DB is already using too many IM modules...
1. **What is your definition of an issue/incident? What triggers an issue (e.g., email, manual entry, automatic)?**
   - Issue – concern, risk, worry (has yet to happen)
   - Incident – already happened
   - Triggers: Through conversation, email and meeting

2. **What are some common factors that may cause an issue to be raised? (i.e., expected information not included)**
   - With client group:
     - Not receiving good enough service
     - Late, incomplete, inaccurate delivery
   - Risk: not enough people to complete task (lack of resources)
   - Audit/Regulatory: lack of control areas

3. **Provide an example of an issue you may raise, and how you expect it to be resolved.**
   - Example: client is not receiving appropriate level of service
     - Team managers discuss and plan actions to resolve (on phone)
     - If problem persists – escalate (to me)
     - With offshore head, discuss cause, why issue is persisting; come to a consensus as to how to go about resolution
   - No IM tools currently in use

4. **Once an issue is raised, what do you think is the ideal time frame for resolution (without escalation)?**
   - Acknowledgement within 24 hours to decide the timeframe for resolution (discuss urgency)
   - Or a feedback time to follow up if time-frame not defined within 24 hours

5. **What do you think is an ideal method through which to track the aging of an issue?**
   - Too much time recording issues rather than solving…

6. **What type (e.g. operational, technical), priority (RAG), or severity (high, medium, low) of issue needs to be escalated to a manager, and who qualifies?**
   - High priority or severity
   - Not being fixed within certain time frame
   - Open too long
   - Need escalation matrix

7. **What triggers the closure of an issue?**
   - Agreement between raiser and owner
8. What metrics (e.g., number of open issues, number of closed issues, today’s new issues) would you like to see displayed in summary upon login to OPAL (i.e., in a dashboard ‘MyPage’ view)?
   - Today’s new issues (pertaining to my team and my personal issues)
   - Week’s new issues
   - Today’s closed issues
   - Aging of issues
   - Monthly trend analysis
   - Visibility to my client group
   - Customizable

9. When you need access to a related document, should it be attached to the issue, available upon request, or available through the search function?
   - …

10. What other relevant pertinent information do you think should be included in the Issue Management (IM) module?
    - Issue definition should be very clear
    - Currently 12 IM systems at DB, too many and none are “light touch enough”
    - Cultural shift will be a problem – people see IM as another level of bureaucracy
    - Integrate into mail system
    - Senior level acceptance
    - Choice of text, email, pop-up will be interesting to see
1. **What is your definition of an issue/incident? What triggers an issue (e.g., email, manual entry, automatic)?**
   - Issue – bug or defect in software
   - Trigger: through testing or user complaint

2. **What are some common factors that may cause an issue to be raised? (i.e., expected information not included)**
   - Stall within workflow

3. **Provide an example of an issue you may raise, and how you expect it to be resolved.**
   - When a user has a problem, OPAL team or IT support works to resolve it

4. **Once an issue is raised, what do you think is the ideal time frame for resolution (without escalation)?**
   - Within a week

5. **What do you think is an ideal method through which to track the aging of an issue?**
   - No email/text…
   - Notification is ok

6. **What type (e.g., operational, technical), priority (RAG), or severity (high, medium, low) of issue needs to be escalated to a manager, and who qualifies?**
   - High severity level escalated to manager of IT support team

7. **What triggers the closure of an issue?**
   - Agreement between raiser and owner
   - Ask raiser if he agrees with owner’s decision

8. **What metrics (e.g., number of open issues, number of closed issues, today’s new issues) would you like to see displayed in summary upon login to OPAL (i.e., in a dashboard ‘MyPage’ view)?**
   - Number of issues open today
   - Aging of the issue
   - Trend analysis

9. **When you need access to a related document, should it be attached to the issue, available upon request, or available through the search function?**
   - Linked, but not on dashboard

10. **What other relevant pertinent information do you think should be included in the Issue Management (IM) module?**
    - …
1. What is your definition of an issue/incident? What triggers an issue (e.g., email, manual entry, automatic)?
   - Anything that cannot be rectified within next day (before next PIP issuance)

2. What are some common factors that may cause an issue to be raised? (i.e., expected information not included)
   - …

3. Provide an example of an issue you may raise, and how you expect it to be resolved.
   - …

4. Once an issue is raised, what do you think is the ideal time frame for resolution (without escalation)?
   - Within 1 day

5. What do you think is an ideal method through which to track the aging of an issue?
   - OPAL summary
   - Need personal preferences in OPAL
     - Status change notifications
     - Open/close notifications
     - Notify only if it pertains to your area

6. What type (e.g., operational, technical), priority (RAG), or severity (high, medium, low) of issue needs to be escalated to a manager, and who qualifies?
   - Depends on materiality and financial impact
   - No hard and fast rule

7. What triggers the closure of an issue?
   - Person who raised the issue (FD) will determine closure

8. What metrics (e.g., number of open issues, number of closed issues, today’s new issues) would you like to see displayed in summary upon login to OPAL (i.e., in a dashboard ‘MyPage’ view)?
   - Number of new issues
   - New changes/updates
   - Status update from GBS
   - Functionality
   - Related to me
   - Flexibility to choose

9. When you need access to a related document, should it be attached to the issue, available upon request, or available through the search function?
10. What other relevant pertinent information do you think should be included in the Issue Management (IM) module?

➢ ...
1. **What is your definition of an issue/incident? What triggers an issue (e.g., email, manual entry, automatic)?**
   - Issue – no clear definition of responsibility, a task, lack of transparency
   - Incident – process breakdown of failure
   - Trigger: monthly global performance review board meeting; email

2. **What are some common factors that may cause an issue to be raised? (i.e., expected information not included)**
   - …

3. **Provide an example of an issue you may raise, and how you expect it to be resolved.**
   - Expectation: Finance issue should be owned by a Finance person, this will make everything much faster

4. **Once an issue is raised, what do you think is the ideal time frame for resolution (without escalation)?**
   - Depends on issue type

5. **What do you think is an ideal method through which to track the aging of an issue?**
   - Currently using collabnet
   - Using resolution date to track and bring the page to Performance Review Board monthly to discuss

6. **What type (e.g. operational, technical), priority (RAG), or severity (high, medium, low) of issue needs to be escalated to a manager, and who qualifies**
   - No resolution within pre-defined milestones
   - Global FD/FM

7. **What triggers the closure of an issue?**
   - Delivery of an agreement
   - Postponed or put on hold

8. **What metrics (e.g., number of open issues, number of closed issues, today’s new issues) would you like to see displayed in summary upon login to OPAL (i.e., in a dashboard ‘MyPage’ view)?**
   - Depends on the function
   - COO want to see issues under their names
   - Managers want to see regional # of issues

9. **When you need access to a related document, should it be attached to the issue, available upon request, or available through the search function?**
   - …
10. What other relevant pertinent information do you think should be included in the Issue Management (IM) module?
   ➢ Great tool doesn’t mean people will use it. Should have a circle for all parties – log keeper, issue owner, resolver all involved
Interview #21
Thursday, December 1, 2011, 8:30am

1. **What is your definition of an issue/incident? What triggers an issue (e.g., email, manual entry, automatic)?**
   - Realistically raising awareness to something that went wrong and solving it
   - There’s no huge priority between issue and incident
   - Finance: Didn’t do well on something
   - GBS: Materiality, break threshold, numerical

2. **What are some common factors that may cause an issue to be raised? (i.e., expected information not included)**
   - ...

3. **Provide an example of an issue you may raise, and how you expect it to be resolved.**
   - ...

4. **Once an issue is raised, what do you think is the ideal time frame for resolution (without escalation)?**
   - Depends on issue type
   - Technology issues- very long
   - KRI’s will help

5. **What do you think is an ideal method through which to track the aging of an issue?**
   - ...

6. **What type (e.g. operational, technical), priority (RAG), or severity (high, medium, low) of issue needs to be escalated to a manager, and who qualifies?**
   - Managers should be proactive accessing sensitivities all the time, instead of being reactive

7. **What triggers the closure of an issue?**
   - Agreement (as long as history trail shows everything, doesn’t matter)

8. **What metrics (e.g., number of open issues, number of closed issues, today’s new issues) would you like to see displayed in summary upon login to OPAL (i.e., in a dashboard ‘MyPage’ view)?**
   - Relevant to your name, your team and customizable
   - Able to do administrator’s job, add value without requesting from administrator

9. **When you need access to a related document, should it be attached to the issue, available upon request, or available through the search function?**
   - ...
10. What other relevant pertinent information do you think should be included in the Issue Management (IM) module?

- Minimize administrative cost
- OPAL - everything’s connected, should be able to auto create issue
- People may expect too much of the new tool (look at methods)
- Understand where the issues are
### Appendix D: Interview Compilation (By Question)

**Question 1:**

What is your definition of an issue/incident? What triggers an issue?

<table>
<thead>
<tr>
<th>Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Interview #1</strong></td>
</tr>
<tr>
<td>- Issue – something that impacts the team’s daily performance (in terms of quality and/or time)/ability to deliver to the client. Requires action to be taken.</td>
</tr>
<tr>
<td>- Incident – less serious. It is something that we need to be aware of, but is not a direct problem. Has happened, but it does not necessarily impact delivery.</td>
</tr>
<tr>
<td>- Triggers: manual, email/phone (client wants something different; escalation), PRISM online dashboard (flags issues automatically), discussion forums (where people get together and discuss the problems), 30% JIRA, 70% weekly calls onshore/offshore</td>
</tr>
<tr>
<td>- Ex.: receive information late, wrong information presented to a client, process stopped (due to indecision)</td>
</tr>
<tr>
<td><strong>Interview #2</strong></td>
</tr>
<tr>
<td>- Anyone can flag up an issue/incident</td>
</tr>
<tr>
<td>- Issue – hasn’t yet had an impact</td>
</tr>
<tr>
<td>- Incident – more serious than an issue. Something has happened as a result of an issue, but basically the same…</td>
</tr>
<tr>
<td>- Part of a process flow/output → something is working improperly, is inaccurate, or delivered late…</td>
</tr>
<tr>
<td>- Triggers: email</td>
</tr>
<tr>
<td><strong>Interview #3</strong></td>
</tr>
<tr>
<td>- Issue – not as critical. Impacts the SLA.</td>
</tr>
<tr>
<td>- Incident – bigger, critical. Totally missed it.</td>
</tr>
<tr>
<td>- Must consider service level agreement (SLA) from function (finance vs. GBS) AND department (offshore vs. onshore) – must be defined and agreed to with all partners</td>
</tr>
<tr>
<td>- I/I is anything that does not meet the predefined SLA</td>
</tr>
<tr>
<td>- Triggers: (3 level engagement)</td>
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<tr>
<td>- Operational: end-of-day summary email</td>
</tr>
<tr>
<td>- Weekly Review: items outstanding → 1 week → need to be escalated</td>
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<tr>
<td>- Monthly Review: larger broken items (fix a root cause?)</td>
</tr>
<tr>
<td><strong>Interview #4</strong></td>
</tr>
<tr>
<td>- Issue – break in reconciliation system (no delivery on reconciliation; know why, but no action; don’t know why)</td>
</tr>
<tr>
<td>- Need to make sure that trades are valued correctly (this is what “finance” does) – this requires reconciliations</td>
</tr>
<tr>
<td>- Incident – recurring issue within a control environment</td>
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<tr>
<td>- Triggers (how is an issue communicated to you):</td>
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<tr>
<td>- Intuition that there should be a reconciliation</td>
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<tr>
<td>- Email</td>
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<tr>
<td>- OPAL</td>
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<tr>
<td>- Check drive</td>
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<tr>
<td>Interview #5</td>
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<td>Interview #6</td>
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<td>Interview #7</td>
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<td>Interview #11</td>
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<tr>
<td>Interview #12</td>
</tr>
<tr>
<td>Interview #13</td>
</tr>
</tbody>
</table>
from the agreed output

- **Issue** - potentially recurring (of similar nature) or severe incident = chronic or substantial incident
  (note: to keep it easier to read this guideline uses the general expression “issue” also including “incidents”, instead of always including “issue and incident”. Wherever required, the limitation on issues in above defined meaning is explicitly mentioned)

- Minimum criteria in which an issue must be raised:
  - KPI is red or amber
  - For every flowback (work which needs to be done onshore again)
  - If issues significantly impact timeliness, quality, and volume

- Triggers: email, manual, or automatic entry in issue management system

**Interview #14**

- Risks that reach a certain level become an issue
- **Issue**
  - (Operational) risk issue – impact bank (e.g., financial, regulatory)
  - Operations issue – does not directly impact the bank as a whole (e.g, GBS doesn’t provide FD with PIPs)
- **Incident** – event that has occurred, crystallization of a risk/issue
- **Trigger:**
  - dbTrack – self-raising
  - dbAware – audit
  - Usually, an issue is raised through system or financial spreadsheet
- Must have action plan, target date and impact level

**Interview #15**

- **Issue** – KPIs missed/delayed, quality/timing problem
  - Day-to-day work
- **Incident** – basically the same – issue can turn into an incident

**Interview #16**

- **Issue** – something is booked late, wrong, not fixed (and will impact business)
- **Trigger:** Phone and email first, if not resolved, then raise in JIRA

**Interview #17**

- **Issue** – concern, risk, worry (has yet to happen)
- **Incident** – already happened
- **Triggers:** Through conversation, email and meeting

**Interview #18**

- **Issue** – bug or defect in software
- **Trigger:** through testing or user complaint

**Interview #19**

- **Issue** – anything that cannot be rectified within next day (before next PIP issuance)

**Interview #20**

- **Issue** – no clear definition of responsibility, a task, lack of transparency
- **Incident** – process breakdown of failure
- **Trigger:** monthly global performance review board meeting; email

**Interview #21**

- Realistically raising awareness to something that went wrong and solving it
- There’s no huge priority between issue and incident
- Finance: Didn’t do well on something
- GBS: Materiality, break threshold, numerical
**Question 2:**
What are some common factors that may cause an issue to be raised?

<table>
<thead>
<tr>
<th>Responses</th>
</tr>
</thead>
</table>
| **Interview #1** | - Late delivery/inaccurate delivery (from DART system)  
- People don’t follow instructions (execution issue) (i.e., new employees who don’t understand what needs to be included)  
- Poor offshore/onshore communication (unclear specification of what needs to be delivered, when, and how; onshore needs to more clearly explain expectations; 40% tasks are ad-hoc) |
| **Interview #2** | - Reconciling a difference  
- Process not working  
- Result of output which highlights result  
- Management information  
- Email |
| **Interview #3** | - Typo (wrong numbers)  
- Misread report  
- No communication back to offshore  
- Amend KOP (Key Operating Procedure)  
- Quantitative: late delivery; client expectation (does it meet? Yes/no)  
- Qualitative: does not meet SLA – on what level? |
| **Interview #4** | - Issue – break in reconciliation system (no delivery on reconciliation; know why, but no action; don’t know why)  
  - Need to make sure that trades are valued correctly (this is what “finance” does) – this requires reconciliations  
- Incident – recurring issue within a control environment  
- Triggers (how is an issue communicated to you):  
  - Intuition that there should be a reconciliation  
  - Email  
  - OPAL  
  - Check drive  
  - Rarely system generated |
| **Interview #5** | - Issue curve or P&L doesn’t match what we know  
- System Issues  
- Made-up numbers  
- Incorrectly estimated |
| **Interview #6** | - Unlinked systems – data cannot be connected from application to application  
- Data integrity and quality  
- Question raised directly from colleagues  
- Talent issue  
- Upstream owner of applications doesn’t keep end client in mind  
- No detailed granular data level within system (needed to solve the problem)  
- Credibility issue |
| **Interview #7** | - Too broad to answer |
| Interview #8 | Ø  Late delivery  
|             | Ø  Inaccurate delivery  
|             | Ø  Incorrect numbers  |
| Interview #9 | Ø  Miscommunication  
|             | Ø  Expected information or result not delivered  |
| Interview #10 | Ø  S1: reputational risk for DB; operational loss; client looking to leave  
|             | Ø  S2: constant problem of not receiving confirmation/overdue reports (escalated)  
|             | Ø  S3: client missing confirmation (least critical)  |
| Interview #11 | Ø  Any problem in production world  |
| Interview #12 |  |
| Interview #13 | Ø  Input data not available in time, Input data incorrect, Output not available in time, Output incorrect, Process delayed or broken  |
| Interview #14 |  |
| Interview #15 |  |
| Interview #16 | Ø  Something hasn’t been booked  
|             | Ø  Something was booked/recorded incorrectly  |
| Interview #17 | Ø  With client group:  
|             |   o  Not receiving good enough service  
|             |   o  Late, incomplete, inaccurate delivery  
|             | Ø  Risk: not enough people to complete task (lack of resources)  
|             | Ø  Audit/Regulatory: lack of control areas  |
| Interview #18 | Ø  Stall within workflow  |
| Interview #19 |  |
| Interview #20 |  |
| Interview #21 |  |
**Question 3:** How do you expect an issue to be resolved?

<table>
<thead>
<tr>
<th>Interview #</th>
<th>Responses</th>
</tr>
</thead>
</table>
| Interview #1 | Front Office Trading:  
  Traders: buy/sell – make $ (P&L)  
  Sales: help traders (no real P&L), revenue/sales credit shadowing P&L  
  If information is delivered to PSC late, there is less processing time at the PSC, and then PSC delivers late as well  
  Structured workflow: look for data, if it’s there…go, if not, escalate to manager immediately → announce delay to onshore personnel → assess impact and risk and communicate issues  
  IT resolution later  
  Why was it late? Avoid in the future |
| Interview #2 | Reconciliation: variances above a certain age may be seen as issues as differences are not being resolved in a timely manner (→ escalation) |
| Interview #3 | Find cause and get it checked through three operation levels: daily, weekly, monthly |
| Interview #4 | No reconciliation of FO FX exposure (trade not accurately reflected in general ledger)  
  Resolution: expect a reconciliation to be put in place |
| Interview #5 | Converging USGAAP + IFRS  
  Find out possible impact to firm/business with action plans  
  P&L: verify if it is correct |
| Interview #6 | Issue identified → identify owner → discussion to agree upon the presence of an issue → action plan for owners |
| Interview #7 | I see a number in a cost report that is out of line – I log it in a system that directs the issue to the right owner of the cost report workflow –  
  The system gives me a reference number and an e-mail link to help me keep track of the issue – Some kind of dashboard is available to me to see status, progress on my issues  
  This is an ideal process  
  Currently no existing IM tool used personally |
| Interview #8 | Ideal process should include direction/assignee |
| Interview #9 | P&L: expect +$1M, lose $5M |
| Interview #10 |  |
| Interview #11 | Human oversight  
  Issue – potential risk, regulatory impact  
  Incident – IT system not working properly, human mistake |
| Interview #12 |  |
| Interview #13 | Produced Report with errors – correction of errors, resend of report, documentation of required changes to avoid reoccurrence |
| Interview #14 |  |
| **Interview #15** |  |
| **Interview #16** |  |
| **Interview #17** | ➢ Example: client is not receiving appropriate level of service  
  o Team managers discuss and plan actions to resolve (on phone)  
  o If problem persists – escalate (to me)  
  o With offshore head, discuss cause, why issue is persisting; come to a consensus as to how to go about resolution  
  ➢ No IM tools currently in use |
| **Interview #18** | ➢ When a user has a problem, OPAL team or IT support works to resolve it |
| **Interview #19** |  |
| **Interview #20** | ➢ Expectation: Finance issue should be owned by a Finance person, this will make everything much faster |
| **Interview #21** |  |
**Question 4:**
What is the ideal time frame for resolution?

<table>
<thead>
<tr>
<th>Responses</th>
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</thead>
</table>
| **Interview #1** | Same day resolution  
| | Missing data should be escalated within 2-3 hours, action plan instituted within 6 hours, risk assessment within 24 hours |
| **Interview #2** | Resolution time frame depends on the issue  
| | Depends on frequency of issue, urgency of issue, and impact of issue |
| **Interview #3** | Depends on the root cause and type of issue  
| | Operational level – should be quick and simple – somebody deals with it immediately (i.e., IT); no need to escalate  
| | Otherwise – 1 day → week → month → question why… KOP wrong? Fix root cause. |
| **Interview #4** | Need a receipt within 3-4 hours stating point of action, estimated time frame |
| **Interview #5** | Usually 24 hours |
| **Interview #6** | |
| **Interview #7** | Depends – a good issue management system will ask the user quantify the risk against a materiality grid and resolution timeline. The best way to do this is to make a step in the process whereby the person assigned the issue confirms they agree/understand the ‘rating’ which includes timeline.  
| | Timeline depends on the estimated agreement upon threshold, for everyone involved in the issue  
| | Materiality grid: establish “rules of the road” – guidelines/regulations for everyone to abide by  
| | o Assess what’s going wrong at a certain level (error, critical or not, risks) |
| **Interview #8** | Depends on the scale and nature of an issue – two years or two hours |
| **Interview #9** | 1 week… sooner is better |
| **Interview #10** | Depends on issue type (note KPI around issue resolution time)  
| | Usually within 24 hours/1 business day… Some departments’ issue types may take longer to resolve |
| **Interview #11** | Depends on the scope and the scale of the project  
| | Large scale issues are usually resolved within 30 days  
| | Usually don’t set time frame, but set inspection point  
| | Daily issues with P&L, IT issues should be resolved within 24 hours  
| | Because issues tend to cut across many functions, discussion takes time |
| **Interview #12** | Preferred as soon as possible  
| | Issues w/a material impact: in a day  
| | Issues w/a structural impact: in a week |
| **Interview #13** | Resolution before or on due date/time, due date depending on urgency of resolution |
| Interview #14 | - Not generally defined  
- Risk-related issues: 12 months (action plan completed), if over 12 month , the bank wants to know why  
- Active risk decision to accept timeframe; allow prioritization  
- Require action plan, allocate resources |
| Interview #15 | - Depends on the issue type
  - Top priority issues – 1 day  
  - Delivery date can be next day or 2 hours  
  - IT dependent issues - reliance on another person – may cause delays  
  - Raiser and owner should agree on a time frame for resolution |
| Interview #16 | - Depends on issue types  
- Once time frame is set, that does not guarantee that issue will be resolved on time  
- Supposed to be automatically escalated if overdue (but this does not necessarily happen) |
| Interview #17 | - Acknowledgement within 24 hours to decide the timeframe for resolution (discuss urgency)  
- Or a feedback time to follow up if time-frame not defined within 24 hours |
| Interview #18 | - Within a week |
| Interview #19 | - Within 1 day |
| Interview #20 | - Depends on issue type |
| Interview #21 |
## Question 5:
What is the ideal method to track the aging of an issue?

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<thead>
<tr>
<th>Responses</th>
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<tbody>
<tr>
<td><strong>Interview #1</strong></td>
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<td><strong>Interview #2</strong></td>
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<td><strong>Interview #3</strong></td>
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<tr>
<td><strong>Interview #4</strong></td>
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<td><strong>Interview #5</strong></td>
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<td><strong>Interview #6</strong></td>
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<td><strong>Interview #7</strong></td>
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<td><strong>Interview #8</strong></td>
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<td><strong>Interview #11</strong></td>
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<td><strong>Interview #12</strong></td>
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<tr>
<td><strong>Interview #13</strong></td>
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</tbody>
</table>
| Interview #16 | Track the status of an issue (in dashboard)  
|              |   o “submitted”  
|              |   o “in progress”  
|              |   o “closed”  
|              | Too many emails… not an ideal method  
|              | Dashboard alert should show last time updated (instead of email) |
| Interview #17 | Too much time recording issues rather than solving… |
| Interview #18 | No email/text…  
|              | Notification is ok |
| Interview #19 | OPAL summary  
|              | Need personal preferences in OPAL  
|              |   o Status change notifications  
|              |   o Open/close notifications  
|              |   o Notify only if it pertains to your are |
| Interview #20 | Currently using collabnet  
|              | Using resolution date to track and bring the page to Performance Review Board monthly to discuss |
| Interview #21 | |
## Question 6:
What type of issue needs to be escalated to a manager?

<table>
<thead>
<tr>
<th>Responses</th>
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</thead>
</table>
| **Interview #1** | - Differs from onshore here. PSC has strict hierarchy/reporting techniques  
- Escalation depends on the quality assessment of the issue (non-standard issue means senior management is more involved)  
- Issues need to be escalated immediately, through the hierarchy |
| **Interview #2** | - Priority and severity thresholds vary on issues and what you’re actually looking at  
- Could also be noted “critical,” “significant” |
| **Interview #3** | - 3 day threshold: exceeded or potential to exceed → escalate |
| **Interview #4** | - Poses danger to the bank – big enough to merit the attention of senior management  
- Rank according to financial impact |
| **Interview #5** | - A trending issue – if a pattern develops, identify and (possibly) escalate  
- Recurring root cause  
- Loss goes over pre-defined limit |
| **Interview #6** | - Integrity of mapping – escalate to management or owners of the issue  
- An issue on a very granular/detailed level |
| **Interview #7** | - Issues not resolved by agreed timeline – transparency of escalation path needed |
| **Interview #8** | - Depends on how big the issue is (monetarily) |
| **Interview #9** | - S1 level issue needs immediate attention (usually raise directly through calls to Service Relationship Management (SRM) group)  
- S2-S1: severity level change needs to be escalated/announced via notification |
| **Interview #10** | - Issues are always escalated (inc. issues not solved within certain time frame)  
- Usually high priority, amber and red RAG status will be escalated to the proper level |
| **Interview #11** | - Escalation occurs through email  
- Escalation depends on materiality of item (P&L or balance sheet impact)  
- Depends on age of item (very old or not being addressed by colleagues) |
<p>| <strong>Interview #12</strong> | - Overdue issues to Team Leads, Important or Critical Issues to senior manager, Issues with material impact on production schedule to senior manager – priority and severity can be set by reporter and reviewed by supervisor/team lead – escalation by sourcing / business manager as appropriate. |
| <strong>Interview #13</strong> | - No standard policy |</p>
<table>
<thead>
<tr>
<th>Interview #15</th>
<th>Red and Amber may indicate additional risk</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Depends on severity level: S1-S4</td>
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<tr>
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<td>o S4: Issue stays within immediate team</td>
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<tr>
<td></td>
<td>o S3: Escalate to supervisor</td>
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<tr>
<td></td>
<td>o S2: Escalate to sourcing manager</td>
</tr>
<tr>
<td></td>
<td>o S1: Escalate to director</td>
</tr>
<tr>
<td>Interview #16</td>
<td>Auto-escalation matrix (automatically escalate when overdue)</td>
</tr>
<tr>
<td></td>
<td>Manual escalation</td>
</tr>
<tr>
<td>Interview #17</td>
<td>High priority or severity</td>
</tr>
<tr>
<td></td>
<td>Not being fixed within certain time frame</td>
</tr>
<tr>
<td></td>
<td>Open too long</td>
</tr>
<tr>
<td></td>
<td>Need escalation matrix</td>
</tr>
<tr>
<td>Interview #18</td>
<td>High severity level escalated to manager of IT support team</td>
</tr>
<tr>
<td>Interview #19</td>
<td>Depends on materiality and financial impact</td>
</tr>
<tr>
<td></td>
<td>No hard and fast rule</td>
</tr>
<tr>
<td>Interview #20</td>
<td>No resolution within pre-defined milestones</td>
</tr>
<tr>
<td></td>
<td>Global FD/FM</td>
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<tr>
<td>Interview #21</td>
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</table>
**Question 7:**

**What triggers the closure of an issue?**

<table>
<thead>
<tr>
<th>Responses</th>
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</thead>
<tbody>
<tr>
<td><strong>Interview #1</strong></td>
</tr>
<tr>
<td>➢ Nothing in particular. Senior managers (Damian) have ultimate say</td>
</tr>
<tr>
<td>➢ Need to reach onshore/offshore agreement (90% closed at weekly meeting)</td>
</tr>
<tr>
<td><strong>Interview #2</strong></td>
</tr>
<tr>
<td>➢ Demonstration that the issue will not recur</td>
</tr>
<tr>
<td>➢ Root cause fixed with mitigation action put in place</td>
</tr>
<tr>
<td>➢ Some may say that you can close an issue prior to remediation sometimes (mitigate later)</td>
</tr>
<tr>
<td><strong>Interview #3</strong></td>
</tr>
<tr>
<td>➢ Issue owner or stakeholders are responsible and must agree to closure of an issue</td>
</tr>
<tr>
<td>➢ Disagreements to monthly forum → action steps to completion</td>
</tr>
<tr>
<td>➢ Operational: workflow issue → fix → test → confirm</td>
</tr>
<tr>
<td><strong>Interview #4</strong></td>
</tr>
<tr>
<td>➢ Issue reconciled</td>
</tr>
<tr>
<td><strong>Interview #5</strong></td>
</tr>
<tr>
<td>➢ Issue cause is fixed and the person who raised the issue is comfortable with closure</td>
</tr>
<tr>
<td>➢ Management is not necessarily involved</td>
</tr>
<tr>
<td><strong>Interview #6</strong></td>
</tr>
<tr>
<td>➢ Individual gives transparency on an issue → reach agreement among parties</td>
</tr>
<tr>
<td><strong>Interview #7</strong></td>
</tr>
<tr>
<td>➢ Depends on the person</td>
</tr>
<tr>
<td>➢ For himself, simply wants to know that the issue is being resolved – status/progress</td>
</tr>
<tr>
<td>➢ For PSC (Manila), more specific real-time details</td>
</tr>
<tr>
<td>➢ Look at metrics out of JIRA</td>
</tr>
<tr>
<td><strong>Interview #8</strong></td>
</tr>
<tr>
<td>➢ Confirmation from owner that issue is resolved</td>
</tr>
<tr>
<td>➢ Owner and issue raiser should be in agreement</td>
</tr>
<tr>
<td><strong>Interview #9</strong></td>
</tr>
<tr>
<td>➢ P&amp;L goes through – sign-off (agreement among people involved)</td>
</tr>
<tr>
<td><strong>Interview #10</strong></td>
</tr>
<tr>
<td>➢ Issue owner/originator is responsible for closing the issue after it is resolved</td>
</tr>
<tr>
<td>➢ If an issue is assigned out to another department, after an agreement of all parties (mark as resolved), owner will close the issue</td>
</tr>
<tr>
<td>➢ Issue needs to return to originator prior to closure, because issue originator is in contact with the client, and the client’s satisfaction is needed for closure</td>
</tr>
<tr>
<td><strong>Interview #11</strong></td>
</tr>
<tr>
<td>➢ Remediation fully satisfied</td>
</tr>
<tr>
<td>➢ If an issues cannot be remediated in a short amount of time, decide on a “tactical approach” and close the issue until a solution is established -- Issue not entirely solved but management agreed to close it</td>
</tr>
<tr>
<td><strong>Interview #12</strong></td>
</tr>
<tr>
<td>➢ Person to whom the issue was assigned</td>
</tr>
<tr>
<td>➢ No formal process – ad-hoc</td>
</tr>
<tr>
<td><strong>Interview #13</strong></td>
</tr>
<tr>
<td>➢ Agreement between the issue raiser and issue solver</td>
</tr>
<tr>
<td>➢ “I decide”</td>
</tr>
<tr>
<td>➢ Root cause identified and addressed , Issue resolved and Resolution</td>
</tr>
<tr>
<td>Interview #14</td>
</tr>
<tr>
<td>Interview #15</td>
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</tbody>
</table>
| Interview #16 | Agreement is difficult to achieve (prior method… since changed)  
  - Before, issue raiser had to agree to close, but tended not to go in and close issues (unclosed issues accumulate)  
  - Now, issue owner closes the issue upon its resolution |
| Interview #17 | Agreement between raiser and owner |
| Interview #18 | Agreement between raiser and owner  
  - Ask raiser if he agrees with owner’s decision |
| Interview #19 | Person who raised the issue (FD) will determine closure |
| Interview #20 | Delivery of an agreement  
  - Postponed or put on hold |
| Interview #21 | |
**Question 8:**
What metrics would you like to see displayed in dashboard?

<table>
<thead>
<tr>
<th>Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Interview #1</strong></td>
</tr>
</tbody>
</table>
| ➢ Who raised the issue (name, department, seniority)  
➢ When raised (date, time)  
➢ Issue type (drop down)  
➢ Impact assessment (late report to client, quality impact, training with process issues)  
➢ Quality issues (offshore only? V&C?)  
➢ Value (cost $$, time) (pre-text format field with description)  
➢ Name of offshore team member associated (supervisor)  
➢ Is this a repeat issue? |
| **Interview #2** |
| ➢ Heat map/radar screen – show most important issues, ones that you need to be aware of immediately  
➢ Individual metrics (lower level):  
  o Who’s addressing the issue  
  o What issue  
  o Current status  
  o # open issues  
  o How long has the issue been open  
➢ Higher level may not want to see such specifics  
➢ No interest in seeing the # of issues closed unless showing a trend (capability of closing items) |
| **Interview #3** |
| ➢ # open issues  
➢ Who raised issue  
➢ # issues raised this month  
➢ 15-20 KRIIs (trending and standard view)  
➢ How long to resolve  
➢ Need ability/flexibility to customize this view |
| **Interview #4** |
| ➢ How many traders signed off/did not sign off on P&Ls  
➢ Number of cash breaks (aging, amount, business, product)  
➢ Number of PV adjustments (aging, amount, business, product)  
➢ Daily/MTD/YTD P&L  
➢ Traders’ flash P&L @ end of day  
  o Compare flash to next day actual… >$2M difference requires attention  
➢ PSE (PFE?) balance in ledger (aged)  
  o Can’t reconcile made or lost profit  
➢ Unsigned documents (legal agreements made with traders)  
  o 30 days requires attention  
➢ IPV (independent price verification) variance across businesses  
➢ Top 5 Risks by credit curve by business  
➢ Total size of BS (and how much did it move from the day before)  
➢ How much capital used (and subcomponents) |
<p>| <strong>Interview #5</strong> |
| ➢ 4 Management KPIs (for week’s P&amp;L) |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of open issues</td>
<td>Number of open issues, closed issues, new today</td>
</tr>
<tr>
<td>Who raised the issue</td>
<td>Issues in progress</td>
</tr>
<tr>
<td>Aging of the issue</td>
<td>Who is delegated to resolve the issue</td>
</tr>
<tr>
<td>Color code</td>
<td></td>
</tr>
</tbody>
</table>

### Interview #6

- In Analytics, metrics are different than, say, V&C...
- System outages, processing problems, and timely delivery are important to see but a dashboard is not likely the best solution for awareness (these big issues do not/should not enter an IM module)
- Usually, call directly and discuss

### Interview #7

- Depends on the person
  - For himself, simply wants to know that the issue is being resolved – status/progress
  - For PSC (Manila), more specific real-time details
- Look at metrics out of JIRA

### Interview #8

- Metrics relevant to me
  - I raised
  - Specific to my business/area
  - Operational risk to my function
- As a COO – want to see progress – aging, trends – show that value is being added
- As an FD – want to see significant events that inhibit V&C
- Ability and flexibility to choose different options/customize (on a daily basis?)
- Show level of engagement

### Interview #9

- Number of issues
- Aging
- $ amount
- Priority of the issue
- Commentary (click on it for more information – to open the issue on your screen)
- Should be customizable

### Interview #10

- Number of issues new today
- Number of issues assigned to individual
- Number of issues overdue
- Client-based GBS people want to see all issues related to a specific client
- Issue-based GBS people want to see all issues that they must deal with
<table>
<thead>
<tr>
<th>Interview #13</th>
<th>Overdue issues to Team Leads, Important or Critical Issues to senior manager, Issues with material impact on production schedule to senior manager – priority and severity can be set by reporter and reviewed by supervisor/team lead – escalation by sourcing / business manager as appropriate.</th>
</tr>
</thead>
</table>
| Interview #14                                                                | Number of issues due this month  
|                                                                               | Number of issues overdue  
|                                                                               | Number not updated this month  
|                                                                               | Graph showing trend of overdue issues within past 12 months |
| Interview #15                                                                | Issues assigned to you  
|                                                                               | Issues you raised  
|                                                                               | Graphs show aging  
|                                                                               | Number of issues raised over time  
|                                                                               | Supervisor/manager: all issues open under your team  
|                                                                               | MD: department breakdown of teams’ issues  
|                                                                               | Severity level  
|                                                                               | Trend Analysis (team specific) |
| Interview #16                                                                | Issues you raised  
|                                                                               | Last time issues were updated |
| Interview #17                                                                | Today’s new issues (pertaining to my team and my personal issues)  
|                                                                               | Week’s new issues  
|                                                                               | Today’s closed issues  
|                                                                               | Aging of issues  
|                                                                               | Monthly trend analysis  
|                                                                               | Visibility to my client group  
|                                                                               | Customizable |
| Interview #18                                                                | Number of issues open today  
|                                                                               | Aging of the issue  
|                                                                               | Trend analysis |
| Interview #19                                                                | Number of new issues  
|                                                                               | New changes/updates  
|                                                                               | Status update from GBS  
|                                                                               | Functionality  
|                                                                               | Related to me  
|                                                                               | Flexibility to choose |
| Interview #20                                                                | Depends on the function  
|                                                                               | COO want to see issues under their names  
|                                                                               | Managers want to see regional # of issues |
| Interview #21                                                                |
Question 9: How would you like to access related documents?

<table>
<thead>
<tr>
<th>Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Interview #1</strong></td>
</tr>
</tbody>
</table>
| **Interview #2** | Click link  
  Lower level: if you’re working on the issue, you want the appropriate items attached  
  Upper level: summary only |
| **Interview #3** | Flexible                                                                 |
| **Interview #4** |                                                                                         |
| **Interview #5** |                                                                                         |
| **Interview #6** |                                                                                         |
| **Interview #7** | Click link (the issue raiser has a responsibility to provide as much detail as possible up front) |
| **Interview #8** |                                                                                         |
| **Interview #9** | Click link (on dashboard)                                                               |
| **Interview #10** | Click link                                                                                |
| **Interview #11** |                                                                                         |
| **Interview #12** | Click link                                                                                |
| **Interview #13** | Click link (to document storage area, i.e. report library)                               |
| **Interview #14** |                                                                                         |
| **Interview #15** |                                                                                         |
| **Interview #16** |                                                                                         |
| **Interview #17** |                                                                                         |
| **Interview #18** | Click link (not on dashboard)                                                           |
| **Interview #19** |                                                                                         |
| **Interview #20** |                                                                                         |
| **Interview #21** |                                                                                         |
Question 10:
What other relevant pertinent information do you think should be considered in an IM module?

<table>
<thead>
<tr>
<th>Responses</th>
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<tbody>
<tr>
<td><strong>Interview #1</strong></td>
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<tr>
<td><strong>Interview #2</strong></td>
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<td><strong>Interview #3</strong></td>
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<td><strong>Interview #4</strong></td>
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<td><strong>Interview #5</strong></td>
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<td><strong>Interview #6</strong></td>
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<tr>
<td><strong>Interview #7</strong></td>
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<tr>
<td><strong>Interview #8</strong></td>
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<td><strong>Interview #9</strong></td>
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<td><strong>Interview #10</strong></td>
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<tr>
<td><strong>Interview #11</strong></td>
</tr>
<tr>
<td><strong>Interview #12</strong></td>
</tr>
<tr>
<td><strong>Interview #13</strong></td>
</tr>
</tbody>
</table>
category, country, priority, severity, due date and time, escalation level, progress steps, resolution plan, root cause analysis, resolution documentation, time spent for resolution, history of the ticket

- Requirements for IM:
  - Overview of issues
  - Workflow for issue resolution inc. escalation based on set rules
  - Reports for team members, team lead, senior manager
  - Filter option on current and past issues
  - Download of reports/filter to excel for further analysis
- Issue log – ability to search past issues

| Interview #14 | All issues in dbTrack… as per Cannon |
| Interview #15 | IM module should be integrated into workflow module (unlike in JIRA) so that issues are automatically linked to WF |
| Interview #16 | Concern: DB is already using too many IM modules… |
| Interview #17 | Issue definition should be very clear
  - Currently 12 IM systems at DB, too many and none are “light touch enough”
  - Cultural shift will be a problem – people see IM as another level of bureaucracy
  - Integrate into mail system
  - Senior level acceptance
  - Choice of text, email, pop-up will be interesting to see |
| Interview #18 | |
| Interview #19 | |
| Interview #20 | Great tool doesn’t mean people will use it. Should have a circle for all parties – log keeper, issue owner, resolver all involved |
| Interview #21 | |
Appendix E: Best Practices Document

OPAL FINANCE: ISSUE MANAGEMENT MODULE

BEST PRACTICES DOCUMENT

Thursday, December 15th, 2011

Prepared By: Qiying Fan and Catherine Simoneau

Prepared For: Barry Zucker, Director, CIB Finance
**ABSTRACT**

This document is part of the Workflow and Issue Management project, a collaboration between the OPAL Finance Team at Deutsche Bank (DB) and the Worcester Polytechnic Institute (WPI) Wall Street Program Project Team. This project, completed at Deutsche Bank, aims to improve workflow and issue management (IM) among group divisions and across borders.

The goals of the project are to create a best practices document compiling suggestions for enhancements to the existing issue management module, and to develop mock-up functional screens illustrating the best practices. The WPI Team conducted research and interviews to identify functionality gaps needing improvement. This best practices document proposes options for closing these gaps, thereby ensuring financial and managerial transparency and efficiency.

**PROBLEM STATEMENT**

Deutsche Bank currently faces challenges with issue reporting and tracking. The various divisions and locations of the bank utilize different issue management modules, which complicates issue resolution and tracking. There is a need for an improved issue management module that satisfies both onshore and offshore requirements.
OBJECTIVES

1. Identify possible enhancements to close functionality gaps within the OPAL Finance Issue Management module.

2. Design functionality to be developed within the OPAL application to ensure financial and managerial transparency and efficiency.

APPROACH

This report is founded on internal and external research as well as detailed interviews with key DB employees.

Internal research examined issue management at DB through three methods:
   a. review of documents summarizing and analyzing IM modules in use at the Bank,
   b. application demonstrations of the functionality of OPAL Finance and OPAL GBS, and
   c. experience using the OPAL Finance application.

External research examined issue management modules and best practices in use at other companies. This research highlighted the key features of successful IM modules and the guiding principles for the development of an IM system. Appendix A presents an overview of the internal and external research sources.

Interviews were conducted over a three-week period with 22 individuals at both onshore and offshore locations. These interviews were based on a 10-question survey [Appendix B] that was developed alongside the OPAL Finance Team, and addressed details regarding the tracking and resolution of issues. A sample of interview responses is attached in Appendix C.
BEST PRACTICES

The following best practices achieve the first objective: to identify possible enhancements to close functionality gaps within the OPAL Finance issue management module.

Issue Identification

- **Clear Issue Definition:** A clear and agreed upon definition of an issue and an incident should be available to all OPAL users. These terms have been defined in the “Issue Management Tool for Group Finance” Business Requirements Document [Appendix D]. The definitions should be available within the OPAL application and distributed to OPAL users for clarity. This will ensure that all users understand the purpose of the module.

- **Clear Rating Criteria:** Clear definitions of rating criteria (severity & priority) should be provided to OPAL users to ensure proper classification. These terms have also previously been defined in “Definitions of RAG, Risk, and Issue” [Appendix E], and should be available within the OPAL application and distributed to OPAL users for reference. Such ratings are essential for task prioritization and escalation, and are ineffective if not used consistently.

- **Issue Recording:** All issues need to be recorded in an issue log (OPAL). This includes issues identified over the phone, over email, through personal review of a document, or any other method. Minor issues should not be overlooked, as there may be a root cause that needs to be addressed, and recording issues can help reveal root problems. All issues, upon recording, should also be assigned an identification number for tracking, referencing, and linking to other issues.

- **Email Integration:** Because of the volume of issues identified over email, OPAL should be integrated with email systems to allow for more efficient issue recording. This may be in the form of an “add-in” downloaded to the email program which displays a toolbar at the top of the email window with an option to raise an issue. The add-in will scan the email to pre-populate “add issue” fields within OPAL.

Issue Analysis

- **Ownership Assignment:** The issue owner (responsible for issue resolution) should be clearly identified on the ticket, as this assignment should automatically trigger a notification to the owner stating that he or she has been assigned an issue. Ownership assignment clarifies responsibility for resolution of an issue. Assignment notifications make sure that the owner knows of his or her responsibility.

- **Related Issues:** The issue raiser should provide links to related issues so that associated or dependent issues can be examined simultaneously. Additionally, links also allow the issue owner to ask questions to the appropriate associated person. This may help identify a root cause of several issues. Resolution of the root cause helps to avoid future issues.
Additionally, the resolution of one issue may lead to the resolution of a dependent issue, and this association may not be recognized if the link is not provided.

- **Related Documents**: Links to related documents that the issue owner or raiser may need should be attached to the issue in order to expedite issue resolution. Searching for/请求ing additional documents can cause delays in the resolution time. The issue raiser has a responsibility to provide as much detail as possible.

- **Issue Description**: The issue raiser needs to enter a description of the issue, stating the problem and possible methods for resolution. Again, the issue raiser needs to provide as much detail as possible to facilitate and expedite resolution. Pre-defined solutions inform the owner of precisely what needs to be done to reach resolution.

- **Due Date Assignment**: The issue raiser needs to assign a due date to the issue to ensure resolution is reached within an appropriate time frame. The due date confirms that the issue owner is aware of the required time frame for resolution. Additionally, the due date helps users track the aging of an issue: users can receive notifications for important upcoming due dates.

- **Escalation**: An escalation hierarchy should be established, and the ticket should clearly state the name of the individual responsible for the ticket upon escalation. Issues not resolved within the pre-defined time frame or that do not satisfy the SLA should be automatically escalated, based on the established escalation hierarchy. A pre-defined escalation matrix accelerates the resolution process by removing the need for manual approval to escalate.

**Action Steps**

- **Issue Action**: The issue log should state the point of action, or current efforts towards resolution. Users should be able to state the current progress of an issue, in addition to simply whether the issue is open or closed. This should be included as an option to be shown on a user’s dashboard for quick viewing. For example, when raising an issue, the issue raiser may enter “PIP missing data, needs review,” so that the owner is aware of the necessary action to reach resolution.

- **Group Directory**: Names of individuals working on a given issue should be linked to the group directory. When assigning an issue, it should be possible to choose from the group directory. This enables users to ensure that they are assigning an issue to appropriate person or division.

**Issue Tracking**

- **Dashboard Summary**: Upon login to OPAL, a dashboard summarizing issues pertaining to the user and to his or her division should be displayed. The dashboard should be customizable according to each user’s personal preferences: users should be able to select...
the metrics around issues that they would like to see. This gives users quick access to only the information that is relevant to them. This accessibility may encourage users to utilize OPAL more actively and respond to requests in a more timely manner.

- **Notification Customization**: Notifications should be customizable according to each user’s personal preferences: users should be able to choose method of notification (email, pop-up, or text message) as well as reason for notification (i.e., issue updated). Because of the volume of notifications released, users often dismiss these announcements without reading or responding to them. With a decreased number of notifications, users may be more likely to direct their attention towards each one.

- **Trend Analysis**: The dashboard should offer a “trend analysis” graph to show progress of issue tracking (i.e. number of opened issues vs. number of closed issues in a given month). As OPAL users have expressed an interest in a visualization of the success of issue resolution, the trend analysis should present a monthly, weekly or daily overview of issues opened and closed.

- **Search Function**: The Issue Management module should offer a search function to filter the issue log based on any given search terms. The ability to search past issues can help eliminate recurring issues by showing past resolution processes. Search capabilities also serve as a record of issue resolution confirmation, as well as lessons to illustrate proper resolution.

- **Tool Integration**: The OPAL issue management module should be linked to and interact with other issue management tools in use at DB in order to prevent the need to enter identical issues into more than one system. Currently, DB uses twelve different IM modules, which causes inefficient issue tracking and resolution. Integration among modules will allow users to continue to use their original interface while eliminating double keying.

- **Overdue Alerts**: The dashboard should include an aging alert function that attracts the user’s attention when a due date passes (an issue becomes overdue). Additionally, the issue should be automatically escalated upon alert. This is essential as users rely on due dates for issue tracking and escalation. Overdue issues need attention so as to avoid the development of further issues.

- **Knowledge Base**: Following issue resolution, the system should generate a standard form summary of the issue and record it in a central issue data base for future reference. Issue details should be available upon selection of a particular ticket. Such a “knowledge base” allows users to reference past issues as examples or for issue tracking purposes.

**Issue Closure**

- **Closure Rules**: A ticket should include closure rules that define the desired result that will trigger the closure of an issue. To close an issue, the raiser and owner should agree upon resolution. This ensures that both parties are aware of and agree to the terms upon which
an issue is to be closed. Both the raiser and the owner need to be satisfied with the solution to an issue before it is closed to make certain that no subsequent issues follow.

- **Root Cause Identification:** If the issue identifies a larger root cause, a separate issue should be raised for resolution, and that issue should be linked to its related issues. This will lead to the resolution of all related issues, as well as eliminate the development of additional related issues. It is especially important that root cause issues are recorded, as they may be necessary for future reference should a related issue recur.
The following mock-up functional screens achieve the second objective of this best practices document: to design functionality to be developed within the OPAL application.

The screens can be considered as a base upon which to further develop additional features. These user interfaces illustrate the best practices that were developed from the most highly emphasized points addressed in our research and interviews.

Dashboard User Interface

The first user interface, shown below in Figure 1, illustrates the “dashboard,” or summary page displayed upon login to OPAL. The dashboard highlights the most critical aspects of a user’s workflow and tasks. These features are:

<table>
<thead>
<tr>
<th>No.</th>
<th>Feature name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Personalized Summary</td>
<td>Summarize issues based on issue type and time period</td>
</tr>
<tr>
<td>2</td>
<td>Trend Analysis</td>
<td>Compare and evaluate daily, weekly or monthly performance</td>
</tr>
<tr>
<td>3</td>
<td>Issue Metrics</td>
<td>Displays common metrics upon login for a quick summary</td>
</tr>
<tr>
<td>4</td>
<td>Due Date Alert</td>
<td>Color of date turns red when issue becomes overdue; issue automatically escalated</td>
</tr>
<tr>
<td>5</td>
<td>Customization</td>
<td>Hide or add metrics according to user preferences (by right-clicking)</td>
</tr>
</tbody>
</table>
Figure 1: Dashboard User Interface
**Personal Preferences User Interface**

The second user interface designed is the “Personal Preferences” function. This option within the issue management module allows each user to customize his or her personal settings regarding notification alerts. The user has the ability to select the type of issue (e.g., personal or division-based), reasoning for notification (i.e., new issue is raised), and the method of notification (e.g., via email, pop-up, or text message). This interface is shown below in Figure 2.
Figure 2: Personal Preferences User Interface
RECOMMENDATIONS

These best practices summarize the analysis of internal and external research as well as internal interviews with employees representing various divisions and global branches of Deutsche Bank. This document presents these best practices as recommendations for the improvement of workflow and issue management, and the next step towards the production of such enhancements is to consider the implementation of the best practices. The recommendations can be divided into short-term and long-term categories:

Short Term Recommendations

The first step is to review and prioritize the best practices for implementation. As subject matter experts, the OPAL Finance Team should review and prioritize the best practices according to the most imminent needs and requests of users.

Upon prioritization of the best practices, the OPAL Finance Team should consult with the Information Technology (IT) division to investigate the feasibility of the implementation of additional features that reflect high priority functions. These additional functions should be built into the existing OPAL application. The user interfaces presented in this document should be shared with the IT division for reference as to the structure and functionality of select additional features.

Long Term Recommendations

In the long term, the integration of the OPAL application should be considered. There are three proposed aspects to this integration:

1. **Email integration**: DB email platforms (MS Outlook, LotusNotes) should incorporate an issue identification application to allow for issues raised over email to be entered immediately into the OPAL issue management module.

2. **Issue Management module integration**: The various issue management modules currently in use across the Bank should either be integrated to work together, or consolidated into one system to help eliminate the inefficiency of double keying of issues and the lack of transparency.

3. **Workflow integration**: Functionality should be designed within the OPAL application for the automatic generation of issues from the workflow into the issue management module.

This document presents a wide variety of recommendations. Some are more appropriate for consideration in the immediate future, whereas the more substantial recommendations are appropriate for consideration for long term implementation. Most importantly, the OPAL Finance Team should first investigate the feasibility and acceptance of each practice prior to its implementation.
## Appendix A

### Internal and External Research Sources

#### Internal Sources:
- Modules
  - opal

#### External Sources:
- Module Features
  - MetricStream
  - IssueNet 6.0 (Issue Management Software)
  - IssueTrak

- Best Practices
  - CDC (Centers for Disease Control and Prevention)
  - Issue Management Council

- Corporate Modules
  - Seapine Software
  - Siemens
  - Philips
  - NASA
APPENDIX B

Issue Management Questionnaire

1. What is your definition of an issue/incident? What triggers an issue (e.g., email, manual entry, automatic)?

2. What are some common factors that may cause an issue to be raised? (i.e., expected information not included)

3. Provide an example of an issue you may raise, and how you expect it to be resolved.

4. Once an issue is raised, what do you think is the ideal time frame for resolution (without escalation)?

5. What do you think is an ideal method through which to track the aging of an issue?

6. What type (e.g. operational, technical), priority (RAG), or severity (high, medium, low) of issue needs to be escalated to a manager, and who qualifies?

7. What triggers the closure of an issue?

8. What metrics (e.g., number of open issues, number of closed issues, today’s new issues) would you like to see displayed in summary upon login to OPAL (i.e., in a dashboard ‘MyPage’ view)?

9. When you need access to a related document, should it be attached to the issue, available upon request, or available through the search function?

10. What other relevant pertinent information do you think should be included in the IM module?
APPENDIX C

Sample Interview Responses

Q1: What is your definition of an issue/incident?

<table>
<thead>
<tr>
<th>Issue</th>
<th>Incident</th>
</tr>
</thead>
<tbody>
<tr>
<td>Similar to a risk; Has not yet happened</td>
<td>Mechanical; Has already happened</td>
</tr>
<tr>
<td>Impacts the team’s daily performance; Requires action</td>
<td>Less critical; Is not a direct problem</td>
</tr>
<tr>
<td>Not as critical as an incident; Impacts the SLA</td>
<td>More critical</td>
</tr>
</tbody>
</table>

Q2: What are some common factors that may cause an issue to be raised?

- Inaccurate Delivery • 10
- Late Delivery • 6
- System and Process Issues • 5
- Poor Communication • 2

Q6: What type of issue needs to be escalated?

- 21% Other: priority or severity
- 47% Not resolved within time frame
- 32% Need escalation rules

Q8: What metrics would you like to see displayed on dashboard to track an issue?

**Top Metrics**

- Issue Raiser
- Aging
- Progress
- Priority
APPENDIX D

Issue Management Tool for Group Finance (Picazio and Zink, 2010): Confidential Document

APPENDIX E

Definitions of RAG, Risk, and Issue (Kaur, 2011): Confidential Document