

ERM Technology Tools: A Contemporary Look

A Report of the RIMS Technology Advisory Council and RIMS ERM Committee





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ABOUT

RIMS TECHNOLOGY ADVISORY COUNCIL

The mission of RIMS Technology Advisory Council is to review new risk management-related technologies and increase member access to them; facilitate the development and use of risk-related technologies that enable and enhance RIMS member services; identify initiatives where RIMS can provide industry leadership in driving technology-related change benefiting risk managers; and identify and establish information and technology standards to facilitate the ease of use and communication among different technologies and providers.



RIMS ENTERPRISE RISK MANAGEMENT COMMITTEE

The mission of RIMS Enterprise Risk Management (ERM) Committee is to develop, deploy and update tools, training and other support for RIMS to accomplish its vision of establishing itself as the premier resource and support organization for ERM practices.



EXECUTIVE SUMMARY

This RIMS executive report is intended to provide commentary on the use of technology in enterprise risk management (ERM) programs based on survey results from the 2011 RIMS Benchmark Survey and a separate survey of ERM technology vendors conducted by the RIMS Technology Advisory Council (TAC). It is designed to share technology-related information that may be relevant and useful to RIMS members as they embark or continue on their ERM journey. While this report may offer useful insights to product developers as well as ERM technology adopters, no endorsement for a particular technology is intended to be expressed or implied. The key points to consider are:

- An ERM technology process is something that supports or enables ERM. ERM technology can reasonably be linked to the ERM maturity of the organization. As maturity levels rise, the need for and complexity of ERM technology increases.
- Few organizations have fully integrated ERM, but with nearly 80% of survey participants citing some form of an ERM program in place or in progress, the market for effective ERM technology tools appears very strong.
- Risk managers should assess the current ERM maturity level of their organization using the RIMS Risk Maturity Model and other benchmarks to consider the maturity levels they want to reach and how available technology may provide an acceleration tool for achieving the longer-term outcomes they desire.

Introduction and Background

In early 2011, two surveys were approved and distributed by RIMS. The “technology tools provider” survey was distributed to approximately 40 ERM technology vendors and the “technology tools user survey” was incorporated into the annual RIMS Benchmark survey and directed to risk practitioners. Participation in the surveys was voluntary. As the results may not be considered to be representative of the entire technology-solutions industry, additional information has been introduced to provide a broader understanding of the issues.

Before proceeding with the survey results, it may be useful to define ERM technology. For the purpose of this report, ERM technology is computer-based (regardless of platform) and supports significant components of an ERM process, including:

- It facilitates communications with key stakeholders, such as risk owners, board and management, control owners, etc.
- It is contextual and includes capabilities to support management of policy, procedures, plans, risk rating criteria, training, reporting, etc.
- It has risk assessment capabilities
- It records and reports on risk modifiers
- It has monitoring and reviewing functionality

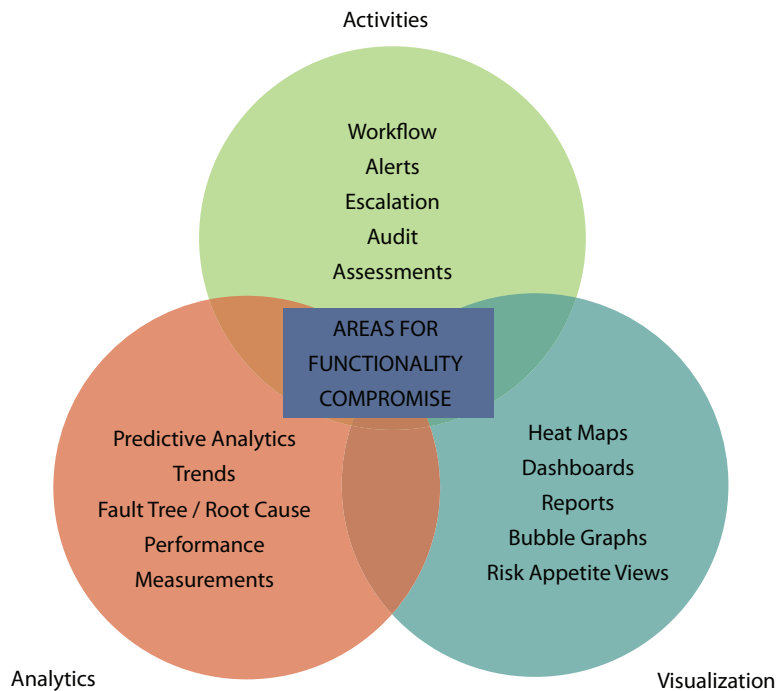
ERM technology is not a risk management information system (RMIS) that only addresses insurable risk or primarily provides claims management functionality. It is also not a purely policy management tool, such as a governance document, or an incident management tool.

An Overview of the Technology Tools Provider Survey

As a general guide, an ERM technology process is something that supports or enables ERM. (For this paper, governance, risk and compliance (GRC) tools are considered to be enablers of ERM, not replacements.) Vendors were asked to describe the key features of their ERM module (Figure 1).

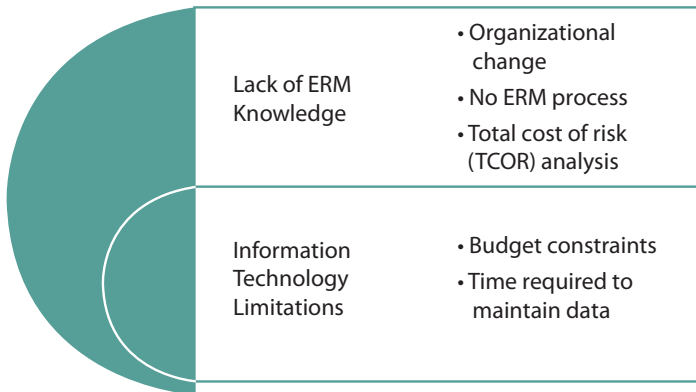
The functionality was grouped into three segments: Analytics, Visualization and Activities. It was apparent that no single solution will contain all possible features. Therefore, potential buyers and builders of these tools need to understand the components and consider their own requirements and specifications in order to determine the optimal combination of functionality at a realistic cost. This list of requirements could become a useful design and negotiating tool particularly if estimated values to the organization are applied against the costs to incorporate (i.e. a simple return on investment (ROI) calculation). Readers are strongly recommended to assess the current ERM maturity level of their organization using the RIMS Risk Maturity Model and other benchmarks, such as ISO 31000, COSO and others found in RIMS 2011 *Widely Used Standards and Guidelines Executive Report*, to consider the maturity levels they want to reach, and to form a value proposition for achieving the long term outcome they desire.

Figure 1: ERM Modules / Features



When preparing to seek bids for ERM technology, it helps the process if the buyer has a clear understanding of not just the functionality required but also of the more general issues that surround the acquisition of the technology. Vendors were asked for the most common objections raised during discussions with potential buyers of ERM technology (Figure 2). Buyers should consider these responses to help them determine whether foundational issues need to be addressed before seeking a tool.

Figure 2: Common Objections Heard by Vendors



As part of the process of selecting a tool, it may be useful to know the top benefits that vendors have heard from their clients who have implemented ERM technology. These included:

Enterprise Risk View

- Risk prioritization
- One risk data repository
- Improved risk focus
- Better risk understanding

Improved Communications

- User interaction
- Unified business units
- Enhanced reporting
- Board involvement

Better Organizational Resilience

- Optimized risk controls
- Stakeholder confidence

Risk practitioners may want to consider these benefits as part of their analysis of functionality to see if they are getting the best combination of features and benefits.

There are over 600 ERM/GRC tools available to risk practitioners. Details of products can be obtained directly from vendors, ERM consultants or commentators such as Open Compliance ethics Group (OCEG), Gartner and Forrester Research. Additionally, “home-grown” tools may have been developed in-house. Buyers of ERM technology need to ensure they have established a clear vision of what they want to accomplish with ERM technology and understand their own unique framework and maturity model. Trying to fit their organization into a nonspecific ERM tool solution provided by the vendor could result in considerable delays, potential “turf battles” within the organization and the increased possibility for failure.

An Overview of the Technology Tools User Survey

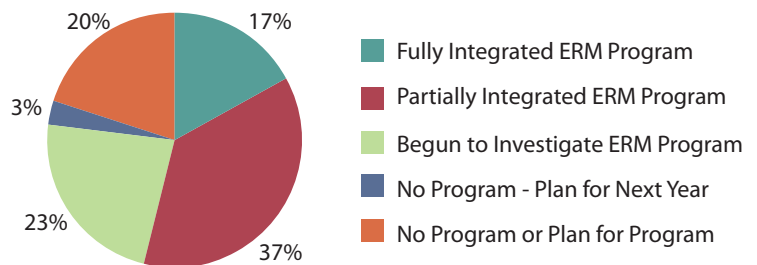
Every year, members of RIMS and other risk practitioners are invited to participate in the annual RIMS Benchmark Survey. In 2011, the RIMS TAC included specific questions relating to ERM technology. The use of the RIMS Benchmark Survey resulted in over 300 responses to the TAC questions.

Participants were first asked about the extent to which their organization had adopted ERM. (See Figure 3)

Only 17% of participants have a fully integrated ERM program; another 63% are in various stages of implementation and planning. With 80% of survey participants citing some form of ERM program in place or in progress, the market for effective technology tools appears very strong. The key to making technology tools effective is to match capabilities with risk practitioners’ needs.

Those who have “Partially Integrated” or “Have Begun to Investigate” may be using existing technology systems. However, these may not be sufficient to reach the desired maturity level. Considering short-term and long-term technology needs by planning the integration of their ERM technology in support of an organization’s desired maturity progression would seem a more strategic and valuable approach than designing an ERM program based on available ERM technology solutions.

Figure 3: Extent to Which ERM Program is Adopted

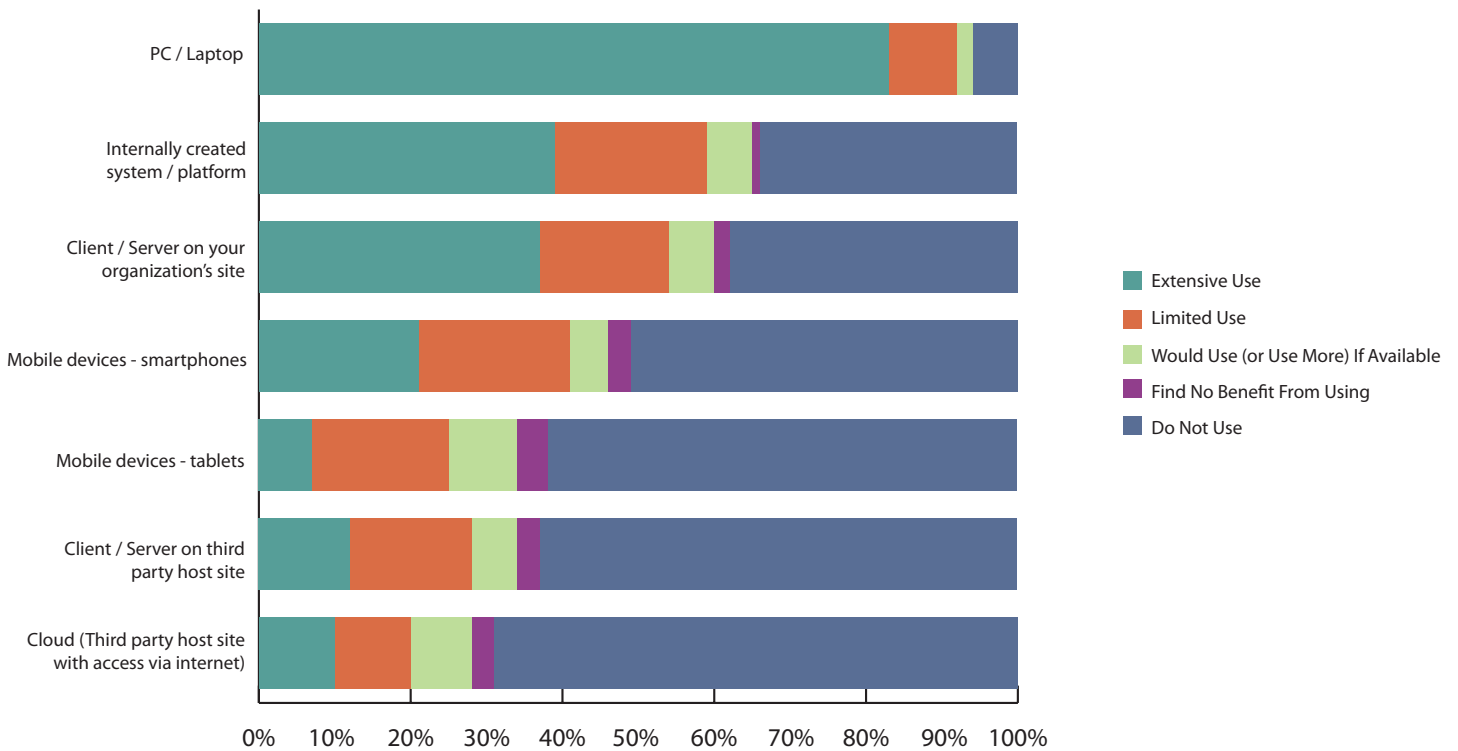


Source: RIMS 2011 Benchmark Survey

What Forms of Technology are Risk Practitioners Currently Using?

Participants appear to be using all forms of technology with no strong rejection of any of the options noted in Figure 4. Less than 5% reported “no benefit from using” any of the technology types. PC/laptops are by far (and not surprisingly) the most extensively used at more than 80%. Considering the relatively brief period in which smart phones have been available, they appear to have obtained a strong foothold with 41% of the respondents using these devices extensively or in a limited way, and 5% indicating they would use them if available. With regard to equipment usage, PCs and internally created software tools were strongly favored over other types of equipment.

Figure 4: What Forms of Technology are Risk Practitioners Currently Using?



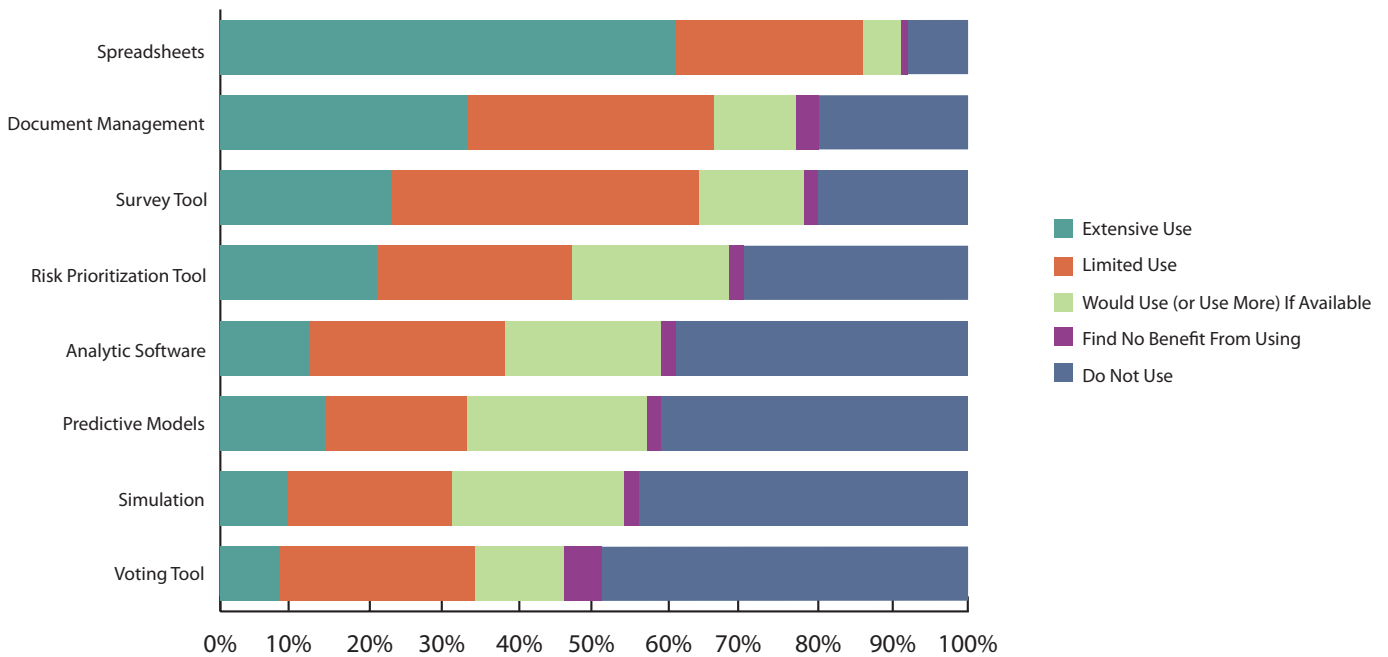
Source: RIMS 2011 Benchmark Survey



What Types of Technology Tools are Risk Practitioners Using to Uncover and Assess Risk?

Participants were asked about the tools they use to uncover and assess risks (Figure 5). Clearly, spreadsheets are the most commonly used tools (over 80%), with document management tools also being used extensively by a third of the participants. Survey tools seem to have found favor with over 60% of the respondents. Predictive models, simulation and voting tools, which typically are used in live facilitated meetings, are used by just over 30% of the respondents. Risk prioritization tools, analytic software, predictive models and simulation would be used (or used more) by more than 20% of the respondents. It is worth noting that very few survey participants (5% or less) “find no benefit from using” ERM tools, which supports the position that ERM tools generally are considered useful.

Figure 5: What Types of Technology Tools are Risk Practitioners Using to Uncover and Assess Risks?

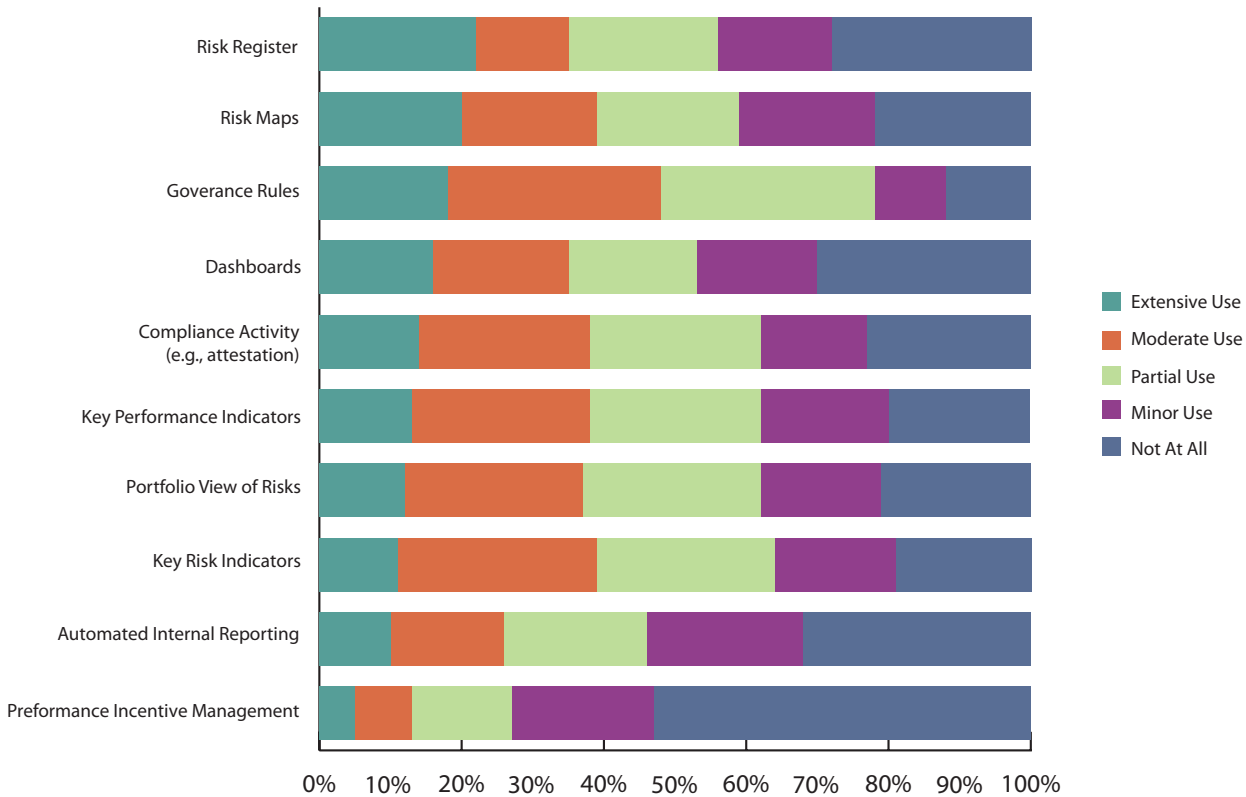


Source: RIMS 2011 Benchmark Survey

What Do Risk Practitioners Want ERM Technology to Do?

Participants were asked to list the specific capabilities or features in ERM technology that they use to monitor and report on risk today (See Figure 6). Risk registers, risk maps and governance rules (e.g., ethics, internal procedures) are used most extensively (by approximately 20%). The key areas for use (regardless of depth) are governance rules, key performance indicators, key risk indicators and portfolio view of risks (approximately 80%). Usage for risk maps and compliance activities are reported to be over 70%. The least usage is for performance incentive management (over 50% not at all), followed by automated internal reporting, dashboards and risk registers (approximately 30% not at all).

Figure 6: What Do Risk Practitioners Want ERM Technology to Do?



Source: RIMS 2011 Benchmark Survey

What Does the Future Hold for ERM Technology?

Participants were asked to list the specific capabilities or features in ERM technology that would help improve the maturity of the ERM programs. Responses were varied, but the most frequently mentioned capabilities were dashboards, analytical tools and automated monitoring of risks. Other noteworthy responses included risk maps, risk registers and survey/voting tools.

These responses reinforce risk practitioners' needs for immediate and accurate information. "In order to grow effectively we need timely, dynamic risk and dependency information that is well understood and embedded in the business," says Leslie Lamb, global risk manager at Cisco Systems, Inc. These findings also underscore the participant responses to the technology solutions that most "would use (or use more) if available": risk prioritization tools, analytic software, predictive models and simulation.

So, based on the survey data and the professional experience of the RIMS TAC, the ideal ERM technology solution would contain the following features:

- Web-enabled "single source of truth"
- View of risks at multiple levels
- Automated risk input
- Auto reporting and calculations across the collected data
- Ability to set and calculate risk tolerance levels or triggers
- Project management capabilities
- Import/export capabilities in order to expedite the sharing of risk information and actions
- End-to-end tracking of risks as they are identified through their eventual resolution
- Common and consistent approach, traceability of accountability, ownership and actions

Conclusion

Prospective buyers and users of ERM technology would be wise to prepare a clear understanding of what they want to achieve before they start looking at available technology. They should understand their current and target ERM maturity levels before looking for tools to support their organizational goals.

There appears to be significant scope for the use of multiple technology tools in the ERM process, and it is unlikely a single set of tools will meet all needs. The decision to acquire a technology tool should incorporate the cost/benefit analysis of the tool. Direct and indirect costs for the tool may range extensively, but without a clear return on investment (ROI), it may be unwise to proceed with any acquisition of tools.

One of the most meaningful insights that emerged from the 2011 technology-related surveys resulted from a comparison of vendor responses and risk manager responses. It seems that vendors offer many of the tools requested, but have not yet been able to match their services with potential client needs. In light of the substantial portion of the market that intends to increase its maturity level of ERM, there may be a deep educational opportunity for vendors – they may need to gain a better understanding of the needs of their prospects as well as what the prospects' hurdles are. Therefore, this report is offered to foster a healthy marketplace by bringing buyers together with technology developers in shared educational progress.

APPENDIX

ERM TECHNOLOGY AT THE UNIVERSITY OF CALIFORNIA

The University of California (UC) has integrated its ERM program throughout its 10 campuses, three national laboratories, five medical centers and world-wide research initiatives, with the assistance of its enterprise risk management information system (ERMIS). As it developed its technology needs over time, UC's enterprise risk services team began with an overarching strategy: create efficiency, reduce the cost of risk, improve the cost of borrowing and reduce IT and operational redundancy.

UC started its risk assessments in 1997, developing its risk technology capabilities over a period of time. Even so, UC still finds value in spreadsheets, albeit greatly enhanced since the early days. In 2008, the Office of the President released an enhanced Excel-based risk assessment workbook. Workbooks have since been developed for general and focused risk assessments. Use in actual risk assessments has led to enhancements such as user definable impact and likelihood scales, the ability to evaluate and adjust the current level of control and the creation of a risk and control library.

The ERM program at UC is supported by a wide variety of business resources, processes and applications:

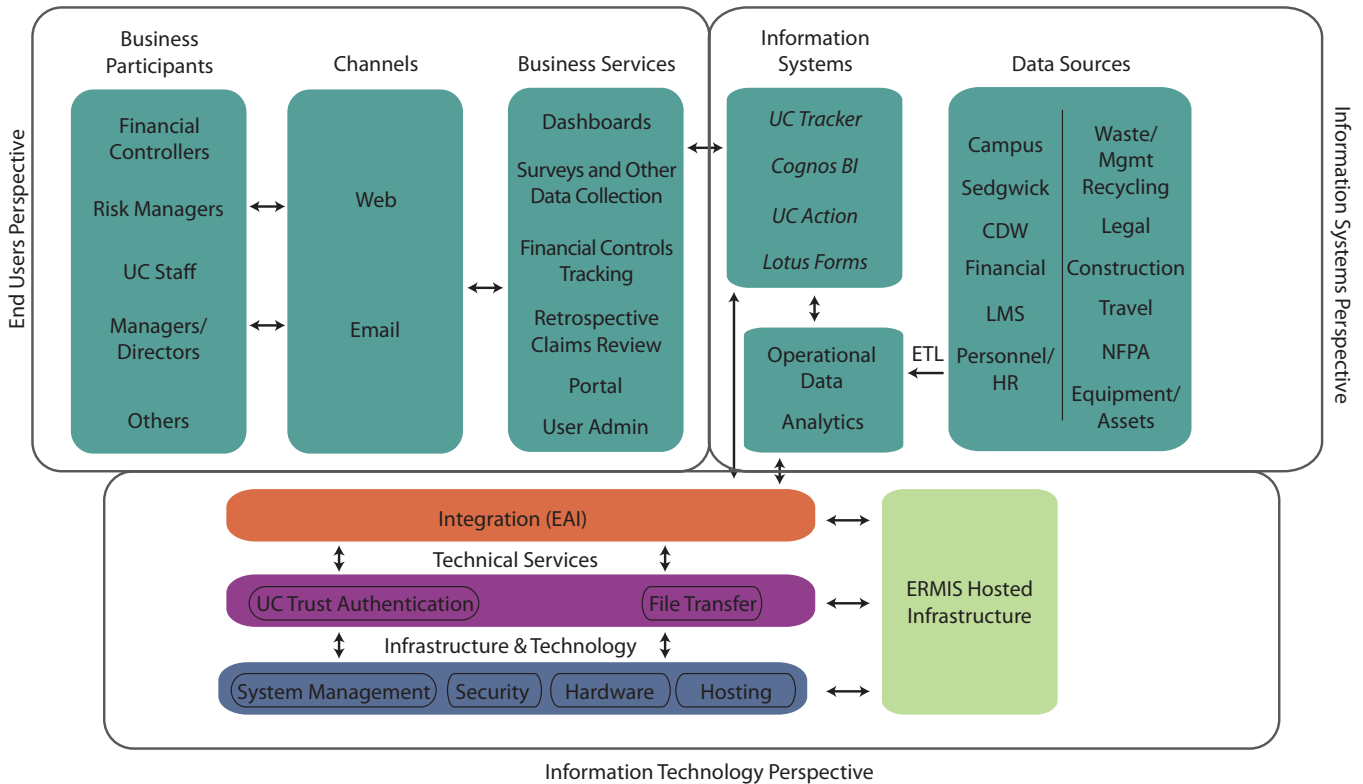
- No Tech: Informational content distributed via web/email (e.g. ERM bulletins and reference materials)
- Low Tech: Partial automation of data collection and analysis such as Excel based risk assessment tools
- High Tech: Information systems such as Cognos-based business analytics and optimization and custom-built information systems (e.g., UC Tracker and UC Action)

UC utilizes a customized platform, drawing on multiple data sources and facilitating multi-channel intuitive user interfaces (See Figure A). The ERMIS is the "High Tech" component of ERM. UC's ERMIS architecture will be discussed from three perspectives: end users, information systems and information technology.

End-Users Perspective

Business participants are the end-users of the system. These are individuals who will access the ERMIS functionality. End-users access the ERMIS functionality through variety of channels, including online and through email. A variety of business services are available to the business participants provided through the ERMIS, including dashboards, surveys, data collection, financial controls tracking and other functionality.

Figure A: UC ERMIS Business Architecture



Information Systems Perspective

Information systems are custom-built (e.g. UC Tracker and UC Action) or a commercial off-the-shelf solution (e.g. Cognos' Business Intelligence and Lotus Forms). Data from various authoritative data sources is extracted, transformed and loaded into the operational and analytics data stores. Information systems encapsulate business rules and analytics logic to manage the data stores and provide ERMIS functionality to end-users.

Information Technology Perspective

The technology layers enable the information systems. The integration layer facilitates information sharing (e.g., user identity data), and reduces functional redundancy (e.g., dashboard reporting of financial controls tracking). The technical services layer consists of services that support specific functions such as single sign-on, secure file transfer, etc. The infrastructure and technology layer represents the hardware and software components, and their management. The technology layers are implemented at the UC ERMIS hosted infrastructure facility.

UC ERMIS Dashboards

While the UC ERMIS-produced dashboards are primarily used by its risk managers enterprisewide, they also are used by campus and enterprise leadership, general counsel's office, external finance staff, UCSF Police Department personnel, and medical center HR and quality departments.

The dashboards are designed to provide:

- Better quantitative analysis capabilities
- Improved analytical and reporting capabilities
- Support for leading risk governance and compliance processes
- System-wide visibility, with local flexibility
- Scalability without creating additional burdens on UC staff

UC ERMIS dashboards are built using a Cognos web-based business intelligence solution, customized by the university to help quantify and track new and pre-defined key performance indicators (KPIs). They are not intended to replicate or replace any existing system. They are user-friendly, comparable and easy to understand. Because they are produced using real-time information, they contain credible and reliable information.

"Our solutions allow the university to take greater risk by improving outcomes," says Grace Crickette, UC's chief risk officer, as she describes how the technology tools that she and her team have deployed use risk to create new opportunities. "We have learned that by focusing on developing tools that address a broad array of risks, both frequent and catastrophic, small and large, we create a more efficient and effective program." UC has not only been able to reduce its cost of risk over time with the support of its technology tools, but its information system has been described by Standard and Poor's as a "credit strength."



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