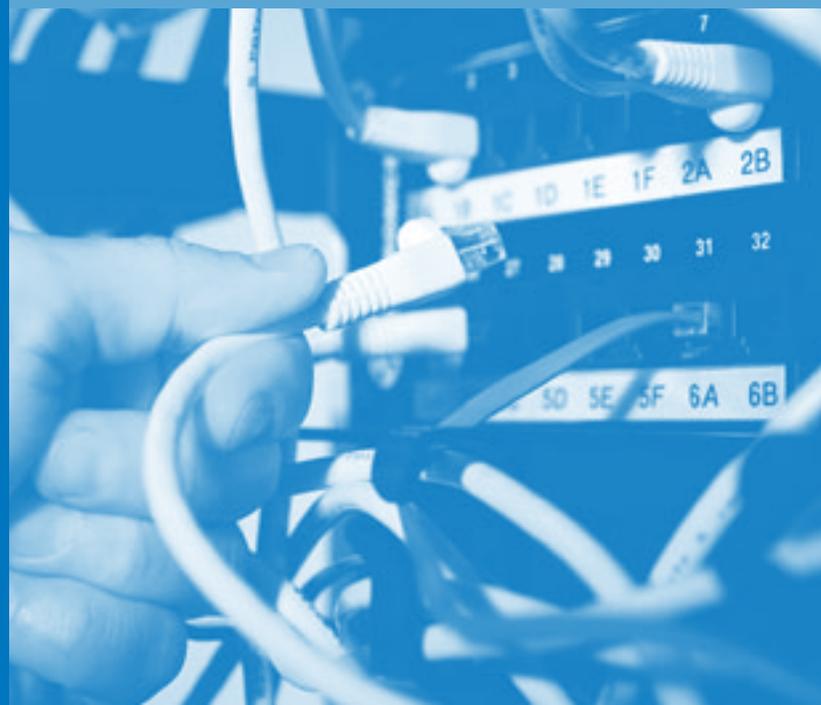


20 Questions

Directors Should Ask about
IT Projects

2007



How to use this publication

Each “20 Questions” briefing is designed to be a concise, easy-to-read introduction to an issue of importance to directors. The question format reflects the oversight role of directors, which includes asking management — and themselves — tough questions. These questions are not intended to be a precise checklist, but rather a way to provide insight into and stimulate discussion of important topics.

The comments that accompany the questions summarize current thinking on the issues of leading organizations, and provide directors with a basis for critically assessing the answers they get, and digging deeper as necessary. Thus, although the questions apply to most medium-to-large organizations, the answers will vary according to the size, complexity and sophistication of the individual organization.

The Information Technology Advisory Committee

20 Questions

Directors Should Ask about
IT Projects

2007

Library and Archives Canada Cataloguing in Publication

20 questions directors should ask about IT Projects

ISBN 978-1-55385-250-6

1. Project management. 2. Information technology — Management.

I. Canadian Institute of Chartered Accountants. II. Title: Twenty questions directors should ask about IT projects.

HD30.2.T883 2007

658.4'04

C2007-901684-7

Copyright © 2007

Canadian Institute of Chartered Accountants

277 Wellington Street West

Toronto, ON M5V 3H2

Printed in Canada

Disponible en français

www.icca.ca/ccti

Preface

The CICA's Information Technology Advisory Committee developed this brochure to guide members of boards of directors in identifying and evaluating issues that might arise as organizations plan and implement significant IT projects. This document might also be of interest and use to members of other governance bodies — in particular audit committees and strategic bodies such as IT steering and IT project committees.

Directors of organizations are expected to satisfy themselves as to the effectiveness of the information technology function, including the management of significant investments in new or updated technology through IT projects and initiatives. This briefing provides suggested questions for boards to ask the Chief Information Officers, Project Sponsors and others. For each question there is a brief explanatory background. We hope that directors, CEOs and CIOs will find these useful in assessing their approach to the management of risk and internal control.

The CICA would like to express its gratitude to the principal author of this brochure, James R. Murray, CA•CISA, CA•CIA, a member of the Information Technology Advisory Committee, and to the other members of this Committee for providing advice and comments.

CICA Information Technology Advisory Committee

Chair

Ray Henrikson, CA•CISA, CA•IT, Scotiabank, Toronto

Committee

Gary S. Baker, CA, Deloitte & Touche LLP, Toronto

David Chan, CA•CISA, CISM, Government of Ontario, Toronto

Allan W.K. Cheung, CA•CISA, CA•IT, The Canadian Depository for Securities Limited, Toronto

Henry Grunberg, CA•IT, Ernst & Young LLP, Toronto

Carole Le Néal, CISA, CISSP, CIA, Mouvement des caisses Desjardins, Montreal

James R. Murray, CA•CISA, CA•CIA, Grant Thornton LLP, Halifax

Erlinda L. Olalia-Carin, CISA, KPMG LLP, Toronto

Robert G. Parker, FCA, CA•CISA, Deloitte & Touche LLP, Toronto

Robert J. Reimer, CA•CISA, CA•IT, CISM, PricewaterhouseCoopers LLP, Winnipeg

Douglas G. Timmins, CA, Office of the Auditor General of Canada, Ottawa

Gerald D. Trites, FCA, CA•CISA, CA•IT, Research Fellow, University of Waterloo, Waterloo (also technical consultant for the Committee)

Bryan C. Walker, CA, The Canadian Institute of Chartered Accountants, Toronto

CICA Staff

William J.L. Swirsky, FCA, Vice President, Knowledge Development

Andrée Lavigne, CA, Principal, Research Studies

Board Responsibilities for IT Projects

The board of directors has a responsibility to ensure that management has processes in place to properly manage their IT projects. To discharge this responsibility, boards need to make appropriate inquiries of management and evaluate their responses.

Management has a responsibility to ensure they have designed, implemented and maintained appropriate processes, and made available adequate resources, to position IT projects for success.

Past surveys of IT projects, such as “The Chaos Report” by The Standish Group, paint a dismal picture.¹ IT project failure rates have been estimated in excess of 50% of the total number undertaken. Rarely have more than 35% of IT projects surveyed been rated as having arrived on time, on budget and with the functionality promised. These results are underscored by the continuing high profile of IT project failures reported in the media.

A very well-known failure, for example, occurred in 1999, when Hershey Food Corp. suffered a significant ERP implementation failure, resulting in two profit warnings in the last quarter of the year. The event resulted in Hershey suffering significant product distribution challenges during the prime Halloween and Christmas seasons, and was reported as a major contributor to Hershey’s lacklustre share price performance that year. At year end, Hershey shares were down 27 percent from their high during the year, a very poor showing considering that a stock market boom was occurring at the time.²

In 2004, AT&T Wireless experienced a well-publicized project failure in its initiative to perform a major Customer Relationship Management (CRM) system upgrade. The resulting system crash and inability to set up or access new accounts created a snowball effect which impaired the performance of other critical AT&T systems and, ultimately, its wireless service to customers. Annoyed wireless customers fled AT&T to other service providers while thousands of potential customers went elsewhere. AT&T Wireless suffered an estimated \$100 million in lost revenue. This event significantly devalued AT&T’s brand, forcing the sale of the service to Cingular for less than half of its original share price.³

Canada has also had its share of project failures. In 2005, a study of IT project success in the Ontario provincial government reported that up to 40% of all IT projects have failed, in some way, to achieve the desired project outcomes — on time, on budget, and with the planned functionality.⁴

Clearly, large IT projects that fail can have major implications for a company — implications with which a board of directors must concern itself. This brochure will outline 20 questions that board members should ask when a company undertakes a significant IT project.

¹ Frank Hayes, “Chaos is back”, *Computerworld*, November 8, 2004, <http://www.computerworld.com/managementtopics/management/project/story/0,10801,97283,00.html>.

² Malcolm Wheatley, “Hershey—ERP Training Stinks”, *CIO Magazine*, June 1, 2000.

³ Christopher Koch, “AT&T Wireless Self-destructs”, *CIO Magazine*, April 15, 2004.

⁴ Marc Songini, “Study Finds Many IT Failures in Ontario”, *Computerworld* (Sidebar), August 29, 2005.

On a related matter see also the November 2006 Report of the Auditor General of Canada at <http://www.oag-bvg.gc.ca/domino/reports.nsf/html/20061103ce.html>.

Management needs information to make informed decisions about launching and designing large projects. A quality business case is required to facilitate this decision.

Key components of a business case should include:

- definition of project scope,
- deliverables,
- investment cost (in both time and resources),
- risk analysis,
- definition of success criteria, and
- alignment of the project with the overall business strategy.

Where alternative strategies are available, it is important that a quality business case demonstrate that viable alternatives were investigated and analysed to determine which option is preferable. A payback analysis is usually a key consideration. In some projects, the strategic objective may be risk mitigation or compliance with regulatory requirements, for instance, the upgrading or replacement of systems due to outdated technology, or the need to implement adequate security mechanisms in order to comply with internal control certification requirements. In short, the business case should enable management to make an informed business decision about the project's probability of success.

The involvement of key project stakeholders is an important component to consider when deciding whether management's processes enable the development of a quality business case. Typical classes of stakeholders can include customers, business partners, regulators, in-house users, and other members of the business with a vested interest in the deliverables of the project, such as legal counsel, internal audit, compliance, finance, IT security, disaster recovery co-ordinator, IT operations, chief privacy officer, and external auditors. Which of these are key depends on the project.

Consultation with key stakeholders ensures that the business case is developed so as to take into account other areas of the business which may be positively or negatively impacted by the technological change.

In any project, not all stakeholders share the same objectives. A properly developed and approved business case enables the key stakeholders to express their priorities and concerns and helps management to make informed trade-off decisions.

The business case also needs to consider whether the organization has the capacity to successfully take on the project. Management must determine the priority of the project at the strategic level — comparing it to the organization's other objectives, planned activities and overall capacity for change. In conjunction with organizational capacity, management

also needs to consider whether personnel have the needed skills and experience to successfully execute the project. A project may have a strong basis for success; however, it may fail because the organization has spread its resources too thin, or its personnel do not have the needed competencies and experience with similar projects.

The outcome of a quality business case is an informed decision by management based on due consideration of an accurate and complete analysis of the proposed project within the organization's current environment. The decision not to invest in a project may be considered a successful outcome.

The board of directors has a responsibility to ensure that management has made an appropriately informed decision to proceed with the project and can expect a successful outcome, in accordance with the expectations of the key stakeholders. To discharge this responsibility, the board should seek answers to the following questions.

1. **Does the business case provide information sufficient to make an informed investment decision?**
2. **Does the organization have the capacity for change, the resources and the skills to succeed in the project described in the business case?**
3. **Has there been appropriate stakeholder consultation regarding the requirements and deliverables of the project?**

Project Planning

The adequacy of the project planning process is a contributing factor in the success, or failure, of any initiative. As evidenced throughout this document, a quality planning process alone is not sufficient to ensure project success; however, the lack of an adequate planning process will almost certainly guarantee failure. In particular, the planning process should include an assessment of whether the plan is complete, understood and supported by all key stakeholders, and whether it adequately considers resources, timelines (including time and resources for contingencies), milestones and deliverables. The planning process incorporates the project management deliverables in addition to the functional deliverables of the project and includes tasks associated with the management of risk (including control procedures), quality, costs and other financial matters, communications, issues, procurement, vendor relationships and resources.

Sufficient and timely training of relevant project team personnel throughout the project lifecycle is recognized to be a key success factor. In addition to being technically competent in their area of responsibility, project team personnel need to be competent in the relevant project management methodologies. Training IT personnel in the operational and production requirements of the new system is as important as training the individual business users on its functionality. Unfortunately, training is a project activity that is too often reduced or eliminated when projects run into budget and time constraints. In addition to

training requirements, other key tasks need to be adequately addressed within the planning process. These include supporting infrastructure development, user acceptance testing, system stress and performance testing, security configuration, system reports and outputs, and business continuity planning. Deficiencies in planning and executing these tasks have led to project inefficiencies and, in some cases, failure.

To gain insight into the project planning process, the board should seek answers to the following questions.

4. Does the project planning process adequately identify risks, tasks, time estimates, deliverables, milestones, and resources/skills needed to complete the project?
5. Does the project planning process consider whether project participants are adequately trained in project development and management methodologies?
6. Has management provided for adequate and timely training for business users and IT personnel in the ongoing operation and use of the system?

Risk Management

Another critical component of IT project management is an adequate project risk identification and monitoring process. Project risks can be internal, such as loss of key project team members, or external, such as changing or undefined customer or stakeholder requirements. Risks may also arise when enterprise resources are redeployed to respond to other financial or competitive pressures. Developing and maintaining a process to identify and mitigate project risks should be an integral part of the project management process.

As projects move forward, additional information or requirements may come to light that necessitate a change in project scope, budget and/or deliverables. Trying to “hit a moving target” increases project risk and has caused many projects to fail or, at least, can lead to “scope creep”. A “change order” management process should be in place to allow the project team to capture and evaluate the impact of these new requirements. The process should identify changes with significant impact and provide for timely evaluation by senior management, who would also need to ensure that the original decision to invest remains valid.

Invariably, conflicts will arise during the life of a project, usually because of differing views on project requirements and related decisions. While experiencing conflicts during a project is normal, the absence of a defined process to resolve significant conflicts through, for example, timely involvement of senior management, can lead to project inefficiencies or project failure.

Technology and business risks need to be considered in the risk identification and monitoring process. Risks associated with implementing new technical solutions that are “on the bleeding edge” and/or implementing solutions that are highly integrated with daily operations and customer satisfaction increase the inherent risk considerably. Where significant risks are likely, consideration should be given to the adequacy of the contingency plans and the budget provided for them.

To help assess management’s project risk management processes, the board should seek answers to the following questions.

- 7. Is there an effective process in place to enable project risks to be identified, monitored and reported for management decision making purposes?**
- 8. Has an effective process been implemented to handle changes to planned deliverables and to manage scope creep?**
- 9. Has an effective process been implemented to identify and resolve project conflicts that may arise during the project life cycle?**

Structure and Management

Inadequate project structure or management can pose significant challenges to a project. In addition to the requisite senior management buy-in, and ongoing oversight and support, a strong project sponsor is needed. In identifying an appropriate sponsor, the most practical choice is often a senior member of management responsible for the area of business that will be the key user of the new technology. The sponsor's role is to oversee the project management on a regular basis to ensure that the project is provided with the necessary resources and that senior management is kept apprised of the status of the project.

To ensure that all activities required to achieve the desired project objectives are identified and budgeted, the project manager should be skilled and experienced in developing comprehensive project plans. The project manager must also have the skills to lead and motivate the project team. Equally important, the project manager must possess the necessary skills to monitor the status of the project and, if needed, suggest corrective actions to the project sponsor.

Outsourcing to service providers continues to be a common component of significant projects. For this reason, management of outsourcing rela-

tionships and deliverables is a key requirement for success. The project management team must ensure that outsourced operational, regulatory and internal control deliverables and schedules are factored into the plan and communicated to and agreed upon by the service provider. Frequent monitoring and problem resolution processes are needed to achieve timely corrective actions by these external providers. The trend toward cost-efficient "offshore" and "nearshore" outsourcing models has introduced additional outsourcing challenges, such as cultural, language, time zone and regulatory differences.

Poor vendor qualification and selection processes, insufficient or ambiguous contracts and deliverables, untimely or incomplete communications, and overall lack of quality management with respect to timely deliverables are often listed as reasons for project failure. Where external service providers are used, the project management process should ensure an effective transfer of key project and technical knowledge to internal resources during the life of the project.

To help ensure effective management oversight, the board should seek answers to the following questions:

10. Are there processes to ensure that all appropriate project roles have been identified and the roles and responsibilities of all project participants have been effectively assigned, communicated and monitored?
11. Are there procedures in place to ensure that the management styles of service providers to the project are integrated with, or otherwise complementary to, those of the organization?
12. Are there processes in place to ensure that outsourced operational, regulatory and internal control deliverables and schedules are factored into the plan and communicated and agreed upon by the service provider?
13. Where key project roles or systems operational positions are filled by external parties, how has the organization addressed the need to provide knowledge transfer and succession planning?

Performance Monitoring

Formal performance monitoring activities, including status reports to senior management, are critical components of successful projects. Unsuccessful projects are often the result of inaccurate, incomplete or untimely status reports.

In some cases, project managers and team members have expressed frustration with the organization's unwillingness to accept bad news about the project status. After a project fails, members of management often acknowledge that red flags or significant project difficulties were known long before the project failed. They often point out that key decisions at the time, such as providing additional resources, could have led to success, or at least could have limited further financial loss.

The decision to substantially re-work or terminate a project early (i.e. "cut the losses") is never a favoured or popular decision. The only alternative may be to move a significantly challenged project forward and invest more resources. In order to help identify and address these "red flags," many organizations have implemented an internal Project Management Office (PMO) to provide ongoing independent monitoring of important projects.

To ensure that management is monitoring project performance and mitigating risks, the board should seek answers to the following questions:

- 14. How is the organization ensuring that the needed competencies, experience, project management tools and timely information are in place to manage and measure the quality of the project?**
- 15. How will senior management and the board be advised of project status, progress against plan, changing risk profiles and emerging issues on a timely basis?**

Implementation

Although project implementation is often viewed as the point in time when the full system moves into production, implementation is actually achieved through a series of decisions over a period of time. Analyses of project failures have often highlighted a lack of importance being assigned to interim sign offs and “go forward” decisions. The project should include formal implementation decision points at the conclusion of each significant project milestone, including full system implementation.

As systems and technologies change during a phased project implementation, organizational dependencies also change. To avoid major disruptions to the organization, project management need to address the day-to-day needs of the business throughout the project life cycle. There must be contingency and fall-back strategies to mitigate the risk of implementation failures.

16. Has management identified critical milestones and developed an effective formal process, including clear criteria, to provide

implementation decisions at the completion of each milestone?

17. What contingency and fall-back strategies have been developed to mitigate the risk of decreased service levels to customers and stakeholders in case of a failed implementation?

Post-implementation

“The system went live, the project was considered complete and the project team (and budget) were disbanded... unfortunately we weren’t done!” This message has been echoed by many organizations and project managers when asked why their seemingly successful projects failed late in their life cycle. Once a system “goes live”, there is still a significant amount of project-related work to be performed. It can take weeks, if not months, to ensure an orderly transition and handover of a new system to operational IT personnel (Help Desk, Operations, Security Administration, etc.) and business users. A period of time is also required to ensure that initial system difficulties are resolved, operational training and knowledge transfer is complete, and periodic processing needs, such as period end or year end requirements, are working as promised. Proper management of post-implementation activities is needed to ensure that knowledgeable project resources are not released from the project too early and that adequate funds are available for an orderly transition.

Organizations must learn from history or be forced to repeat it. In order to obtain maximum value from a project, it is important that lessons learned are identified and captured throughout the life of the project, including the post-implementation review. Although these project lessons cannot be reversed, they will hopefully serve the organization in future projects. It is important that this post-implementation review be performed in an independent manner so that the organization has the most objective possible measure of its project success.

The questions to address are:

18. Is there a clear definition of the completion of the project to ensure the project team is disbanded at the right time?
19. Are there plans in place to conduct a final comparison of actual costs incurred and benefits achieved against the original business case?
20. Is there a process in place for the organization to capture significant lessons learned during the life of the project in order to further mitigate risks for future projects?

Conclusion

Project plans, scope and related decisions will change during the life of a project as additional information and project risks become known. The impact of these risks is mitigated through a comprehensive project planning and management process. As projects change or evolve, so must project documentation, to reflect such matters as revisions to outcomes, project deliverables, return on investment analyses, risk mitigation strategies, and project budgets.

Board members often ponder the question “When should we ask management our questions?” The answer is best summarized as:

- In the final stages of the business case and/or project plan analysis, or at a minimum, before significant resources are invested; and
- throughout the life of the project at regular intervals, particularly at key project milestones, to ensure that the project is on target to meet the business objectives, mitigate risk and achieve the projected return on investment.

The decision to invest in a significant IT project is rooted in the need to achieve a significant business objective. A successful project will achieve the desired objectives and move the organization forward. Conversely, the cost of project failure, in both direct project costs and opportunity costs related to unachieved business objectives, is high. History shows that achieving success is a significant challenge for management, as well as for the board of directors in their oversight role.

Obtaining answers to the above questions throughout the life of “the IT project” is a significant step in discharging this oversight responsibility.



Appendix— Summary of Questions

Business Case

1. Does the business case provide information sufficient to make an informed investment decision?
2. Does the organization have the capacity for change, the resources and the skills to succeed in the project described in the business case?
3. Has there been appropriate stakeholder consultation regarding the requirements and deliverables of the project?

Project Planning

4. Does the project planning process adequately identify risks, tasks, time estimates, deliverables, milestones, and resources/skills needed to complete the project?
5. Does the project planning process consider whether project participants are adequately trained in project development and management methodologies?
6. Has management provided for adequate and timely training for business users and IT personnel in the ongoing operation and use of the system?

Risk Management

7. Is there an effective process in place to enable project risks to be identified, monitored and reported for management decision making purposes?
8. Has an effective process been implemented to handle changes to planned deliverables and to manage scope creep?
9. Has an effective process been implemented to identify and resolve project conflicts that may arise during the project life cycle?

Structure and Management

10. Are there processes to ensure that all appropriate project roles have been identified and the roles and responsibilities of all project participants have been effectively assigned, communicated and monitored?
11. Are there procedures in place to ensure that the management styles of service providers to the project are integrated with, or otherwise complementary to, those of the organization?
12. Are there processes in place to ensure that outsourced operational, regulatory and internal control deliverables and schedules are factored into the plan and communicated and agreed upon by the service provider?
13. Where key project roles or systems operational positions are filled by external parties, how has the organization addressed the need to provide knowledge transfer and succession planning?

Performance Monitoring

14. How is the organization ensuring that the needed competencies, experience, project management tools and timely information are in place to manage and measure the quality of the project?
15. How will senior management and the board be advised of project status, progress against plan, changing risk profiles and emerging issues on a timely basis?

Implementation

16. Has management identified critical milestones and developed an effective formal process, including clear criteria, to provide implementation decisions at the completion of each milestone?
17. What contingency and fall-back strategies have been developed to mitigate the risk of decreased service levels to customers and stakeholders due to a failed implementation?

Post-implementation

18. Is there a clear definition of the completion of the project to ensure the project team is disbanded at the right time?
19. Are there plans in place to conduct a final comparison of actual costs incurred and benefits achieved against the original business case?
20. Is there a process in place for the organization to capture significant lessons learned during the life of the project in order to further mitigate risks for future projects?

About the authors

The Information Technology Advisory Committee (ITAC) is part of the Knowledge Development Group at the CICA. Its role is to provide support and advice on IT matters to the CA profession and the business community.

CICA Information Technology Advisory Committee

Chair

Ray Henrickson, CA•CISA, CA•IT, Scotiabank, Toronto

Committee

Gary S. Baker, CA, Deloitte & Touche LLP, Toronto

David Chan, CA•CISA, CISM, Government of Ontario, Toronto

Allan W.K. Cheung, CA•CISA, CA•IT, The Canadian Depository for Securities Limited, Toronto

Henry Grunberg, CA•IT, Ernst & Young LLP, Toronto

Carole Le Néal, CISA, CISSP, CIA, Mouvement des caisses Desjardins, Montreal

James R. Murray, CA•CISA, CA•CIA, Grant Thornton LLP, Halifax

Erlinda L. Olalia-Carin, CISA, KPMG LLP, Toronto

Robert G. Parker, FCA, CA•CISA, Deloitte & Touche LLP, Toronto

Robert J. Reimer, CA•CISA, CA•IT, CISM, PricewaterhouseCoopers LLP, Winnipeg

Douglas G. Timmins, CA, Office of the Auditor General of Canada, Ottawa

Gerald D. Trites, FCA, CA•CISA, CA•IT, Research Fellow, University of Waterloo, Waterloo
(also technical consultant for the Committee)

Bryan C. Walker, CA, The Canadian Institute of Chartered Accountants, Toronto

CICA Staff

William J.L. Swirsky, FCA, Vice President, Knowledge Development

Andrée Lavigne, CA, Principal, Research Studies

ISBN-13: 978-1-55385-250-6

ISBN-10: 1-55385-250-8



9 781553 852506

04410

20 Questions

Directors Should Ask about
IT Projects
2007

277 Wellington Street West
Toronto, ON Canada
M5V 3H2
Tel: 416-977-0748
1-800-268-3793
Fax: 416-204-3416
www.cica.ca

 The Canadian Institute
of Chartered Accountants