Aligning Business and Information Technology through the Balanced Scorecard at a Major Canadian Financial Group: its Status Measured with an IT BSC Maturity Model

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Abstract

The balanced scorecard (BSC) initially developed by Kaplan and Norton, is a performance management system that enables businesses to drive strategies based on measurement and follow-up. In recent years, the BSC has been applied to information technology (IT). The IT BSC is becoming a popular tool with its concepts widely dispersed by international consultant groups such as GartnerGroup, Renaissance Systems, Nolan Norton Institute, and others. As a result of this interest, the first real-life applications are starting to emerge. In this paper, the development and implementation of an IT BSC within an Information Services Division (ISD) serving a Canadian financial group will be described and discussed. On the basis of this case study, a maturity model for the IT BSC is introduced and the necessary linkage between the business and IT scorecard is clarified.

1. Introduction

Kaplan and Norton [2] have introduced the balanced scorecard at an enterprise level. Their fundamental premise is that the evaluation of a firm should not be restricted to a traditional financial evaluation but should be supplemented with measures concerning customer satisfaction, internal processes and the ability to innovate. Results achieved within these additional perspective areas should assure future financial results and drive the organization towards its strategic goals while keeping all four perspectives in balance. The balanced scorecard can be applied to the IT function and its processes as Gold [1] and Willcocks [9] have conceptually described and has been further developed by Van Grembergen and Van Bruggen [6], Van Grembergen and Timmerman [7] and Van Grembergen [8].

In this paper, the development and implementation of an IT BSC within the Information Services Division of a Canadian tri-company financial group consisting of Great-West Life, London Life and Investors Group (hereafter named The Group) is described and discussed. A maturity model for the IT BSC is introduced and the level of the IT BSC of the case company is matched against this model.

2. IT Balanced Scorecard

In Figure 1, a generic IT balanced scorecard is shown. The *User Orientation* perspective represents the user evaluation of IT. The *Operational Excellence* perspective represents the IT processes employed to develop and support the applications. The *Future Orientation* perspective represents the human and technology resources needed by IT to deliver its services over time. The *Business Contribution* perspective captures the business value created from the IT investments.

USER ORIENTATION	BUSINESS CONTRIBUTION
Perspective question How do users view the IT department? **Mission** To be the preferred supplier of information systems. **Objectives** ● Preferred supplier of applications ● Preferred supplier of operations ● Partnership with users ● User satisfaction	**Perspective question** How does management view the IT department? **Mission** To obtain a reasonable business contribution from IT. **Objectives** ● Control of IT expenses ● Business value of IT projects ● Provision of new business capabilities
OPERATIONAL EXCELLENCE	FUTURE ORIENTATION
Perspective question How effective and efficient are the IT processes? **Mission** To deliver effective and efficient IT systems and services. **Objectives** ● Efficient and effective development efforts ● Efficient and effective operations	**Perspective question** How well is IT positioned to meet future needs? **Mission** To develop opportunities to answer future challenges. **Objectives** ● Training and education of IT staff ● Expertise of IT staff ● Research into emerging technologies ● Age of application portfolio

Figure 1. Generic IT balanced scorecard

Each of these perspectives has to be translated into corresponding metrics and measures that assess the current situation. These assessments need to be repeated periodically and aligned with pre-established goals and benchmarks. Essential components of the IT BSC are the cause-and-effect relationships between measures. It enables the connections between the measures to be clarified in order to determine two key types of measures: outcome measures and performance drivers. A well developed IT scorecard contains a good mix of these two types of measures. Outcome measures such as programmers' productivity *(e.g. number of function points per person per month)* without performance drivers such as IT staff education (e.g. *number of educational days per person per year)* do not communicate how the outcomes are to be achieved. And

performance drivers without outcome measures may lead to significant investment without a measurement indicating whether the chosen strategy is effective. The proposed standard IT BSC links with business through the business contribution perspective. The relationship between IT and business can be more explicitly expressed through a cascade or waterfall of balanced scorecards [5,8]. In Figure 2, the relationship between IT scorecards and the business scorecard is illustrated. The IT Development BSC and the IT Operational BSC both are enablers of the IT Strategic BSC that in turn is the enabler of the Business BSC. This cascade of scorecards becomes a linked set of measures that will be instrumental in aligning IT and business strategy and will help to determine how business value is created through information technology.
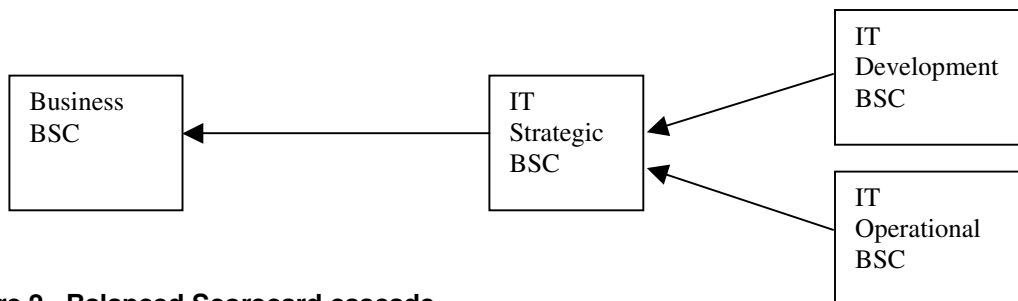
Figure 2. Balanced Scorecard cascade

3. IT BSC project and its organization

The Great-West Life Assurance Company, London Life and Investors Group are members of a leading Canadian financial services group. They merged their IT divisions to achieve true synergies and economics of scale by enabling single systems solutions across all three companies to be explored and implemented as well as single operational processes [4].

Before the merger, the present CIO of the merged IT division, at that time CIO of Great-West Life, had begun focusing on the scorecard as an effective measurement tool. His objective was to ensure that IT was fairly evaluated. In his own words: "through the balanced scorecard I would know what was important to the business and I would not fall victim to the early termination syndrome. Or at least I would have a better

chance of survival". However, once the three companies came together through the acquisition and merger of the IT groups, the stakes were raised considerably. Now, the IT division had exposures on multiple fronts with stakeholders who were concerned about the perceived loss of control over their vital IT services. This prompted an executive request for a formal measure of factors to measure IT's success. The response of the merged IT division was to formalize the criteria into a new and extended IT scorecard based on the experiences gained within Great-West Life.

As in any other organization senior management of the three companies question the benefits of their huge investments in IT and how they can achieve more value through a better alignment of business strategy and IT strategy. Within The Group the specific concerns for the different stakeholders are (Figure 3):

Stakeholders	Key questions
Board of Directors Executive Management Committee	What value does IT deliver? Does IT enable or retard business goal achievement? Does IT advance organizational innovation and learning? Is IT well managed?
Line of Business (LOB) Management Customers	Are we getting value for our IT investments? How does IT influence the customer experience? Does IT favorably affect productivity? Is IT positioning The Group for future market demands?
Audit and Regulatory	Are the organization's assets and operations protected? Are the key business and technology risks being managed? Are proper processes and controls in place?
IT Organization	Are we doing the right things for the business and employees? Are we effective and efficient? Where do we need to improve to meet our goals? Have we satisfied all key stakeholder interests? Can we attract/retain the talent we need to meet business needs? Are we fostering a culture of innovation and learning?

Figure 3. IT concerns of key stakeholders

The concepts of the balanced scorecard and its application to information technology were discovered through a literature search. It was believed that the scorecard could provide an answer to the key questions of the different stakeholders.

The formal development of the IT balanced scorecard began in 1998 and from the start the objectives were clearly stated:

- demonstrate the value added by the IT organization,

- guide the creation of IT strategic plans which link into operational plans,
- establish a balanced set of measures to determine IT effectiveness,
- communicate and motivate IT performance in key areas,
- establish a framework for IT management reporting.

The current situation is that the scorecard effort is not yet approached as a formal project and as a result,

progress has been somewhat limited. It is the intention of IT management to increase the formality of the project in 2001 as they progress toward their target state for the IT organization. To date, the sponsor of the IT BSC has been the CIO and its leader has been the

Director of Management Services who is responsible for ensuring IT is managed as a business. Figure 4 depicts the current IT BSC of the Group.

CUSTOMER ORIENTATION	CORPORATE CONTRIBUTION
Perspective question How should IT appear to the internal customers (users and division managers)? **Mission** To be the supplier of choice for all information services, either directly or indirectly through supplier partnership. **Objectives** ● Customer satisfaction ● IT/business partnership ● Application development performance ● Service level performance	**Perspective question** How should IT appear to the executive committees and Boards in order to be considered a significant contributor to company success? **Mission** To enable and contribute to the achievement of business strategies through the effective application of information technologies and methods. **Objectives** ● Strategic contribution ● Synergy achievement ● Business value of IT projects ● Management of IT investments
OPERATIONAL EXCELLENCE	FUTURE ORIENTATION
Perspective question At which services and processes must IT excel to satisfy the stakeholders and customers? **Mission** To deliver timely and effective IT services at targeted service levels and costs. **Objectives** ● Process excellence ● Responsiveness ● Backlog management and aging ● Security and safety	**Perspective question** How will IT develop the ability to change and improve in order to better achieve the IT and company's vision? **Mission** To develop the internal capabilities to learn and innovate and to exploit future opportunities. **Objectives** ● Service capability improvement ● Staff management effectiveness ● Enterprise architecture evolution ● Emerging technologies research

Figure 4. IT scorecard framework

4. Corporate contribution scorecard

The Corporate contribution perspective evaluates the performance of IT from the viewpoint of executive management, the Board of Directors and the shareholders, and provides answers to the key questions of these stakeholders concerning IT value (cf. Figure 3). The key issues, as depicted by Figure 5, are strategic contribution, synergy achievement, business value of IT projects, and management of IT investments. Benchmarks are used where an objective standard is available or can be determined, in most cases from external sources.

The main measurement challenges are with the areas of *Strategic contribution* and the *Business value of IT projects*. In the strategic area, although the measure is

focused on the successful completion of strategic initiatives, it is recognized that the perception of IT success or value added is highly dependent on the specifics of each initiative. It is now accepted that one must negotiate appropriate measures for each initiative with its corporate sponsor. For the business value of IT projects, the measures flow from the nature of the business case prepared for each project. Those focused on cost reduction use traditional financial measures such as ROI, those based on service improvements will be measured on attainment of higher service level targets, and those based on enabling the achievement of corporate strategy will be based on factors similar to strategic initiatives i.e. negotiated measures which demonstrate achievement of intended benefits.

Synergy achievement is measured through the achievement of single system solutions and Group cost

reductions. Both measures are very crucial in the context of the merger of the three IT organizations in the sense that they enable a post evaluation of this merger and demonstrate to management whether the new IT organization is effective and efficient. The selection of single system solutions was a cooperative effort between business leaders and IT staff, resulting in a "Systems Map" depicting the target applications architecture. The synergy targets were heavily influenced by the consulting firm (Bain & Co.) that was used to assist in evaluating the London Life acquisition and the tri-company IT merger potential. The consultants suggested specific dollar reduction targets for technology services

(IT operations) and application delivery services (IT development) largely based on norms they had developed from their previous merger and acquisition work.

Management of IT investments is a traditional financial objective and is measured through actual versus budgeted expenses and associated cost recovery. The benchmark consists of expenditures from selected competitors and is based on two main sources: (a) Gartner Research delivered the industry-based figures; (b) access to the IT budgets of the major competitors was obtained through contacts with members of a professional association for insurance managers.

Objective	Measures	Benchmarks
Strategic contribution	• Completion of strategic initiatives	• Not applicable
Synergy achievement	• Completion of single system solutions • Achievements of Group synergies	• "Systems Map" • Bain & Co. targets
Business value of IT projects	• Business evaluation based on traditional financial measures (ROI, etc.) or Information Economics	• Company hurdle rate
Management of IT investments	• Actual versus budgeted expenses • Cost recovery versus expenses	• Expenditures relative to "selected" competitors

Figure 5. Corporate contribution scorecard

5. Customer orientation scorecard

The Customer orientation perspective evaluates the performance of IT from the viewpoint of internal business users (customers of IT) and, by extension the customers of the business units. It provides answers to the key questions of these stakeholders concerning IT service quality (cf. Figure 3). As shown in Figure 6, the issues this perspective focuses on are customer satisfaction, IT/business partnership, application development performance and service level performance. At this point, the intent is to focus on developing the business relationships and implementing the new IT organization and processes. As such, IT performance will be presented in relation to expectations and improvements over time (past performance) rather than relative to external benchmarks.

The main measurement challenges are in the "softer" relationship areas, i.e. customer satisfaction and IT/business partnership. In the *Customer satisfaction* area, the IT BSC of the merged IT organization is relying on annual interviews with key business managers. It is the intent to obtain external assistance in developing and implementing a systematic survey process which will provide better insights into customer (user) perceptions of the IT services. In the *IT/business*

partnership area, currently regular steering committee meetings between the IT account team and their business partner are organized.

Application development performance is project oriented and is measured by the quality, cost and schedule conformance delivered by the project. Quality is focused on the degree of acceptance or enthusiasm for the product developed as measured by the index which would be targeted at the product or application's main user group. Various indexes related to application development are under construction. These application development performance indexes are intended to be survey/opinion based instruments to capture key opinion leaders impressions of important, but soft factors such as perceived quality, IT involvement in business decisions and business involvement in applications development.

In terms of *Service level performance,* IT management measures achievement against availability and performance targets for each individual operational area and application. For each individual audience, i.e. LOB or company, IT aggregates the delivery based on overall size (actual dollars spent) for those services and applications used by that audience. The point is to present how much of the operational services are meeting expectations and to help business managers to recognize that IT performance goes beyond the last problem their area experienced.

Objective	Measures	Benchmarks
Customer satisfaction	• Score on annual customer survey	• Past performance
IT/business partnership	• Frequency of LOB IT steering committee meetings • Index of IT involvement in generating new strategic applications • Index of business involvement in developing new applications	• Schedule • Past performance • Past performance
Application delivery performance	• Delivered quality • Delivered within budget • Delivered within time	• Past performance • Past performance • Past performance
Service level performance	• Weighted % of applications and operations services meeting SLA's for availability and performance	• Past performance

Figure 6. Customer orientation scorecard

6. Operational excellence scorecard

The operational excellence scorecard provides the performance of IT from the viewpoint of IT management (process owners and service delivery managers) and the audit and regulatory bodies. The operational excellence perspective copes with the key questions of these stakeholders and provides answers to questions of maturity, productivity and reliability of IT processes (cf. Figure 3). The issues that are of focus here, as displayed in Figure 7, are process excellence, responsiveness, backlog management and aging, and security and safety.

In relation to *Process excellence,* significant use will be made of external benchmarking to assist in developing and tuning the IT organizational structure and IT processes. It is the intent to conduct efficiency and effectiveness comparisons to top performing companies around the world, every two years or so. The services of a consulting firm have been engaged to conduct an operations process maturity assessment as a step in planning to adopt the ITIL operational process models. ITIL (Information Technology Infrastructure Library) contains a comprehensive description of the processes involved in managing IT infrastructures and is considered as a best practice and a standard of quality for IT service management. It is also planned to conduct an applications process maturity assessment using the SEI (Software Engineering Institute) Capability Maturity Model (see e.g. [3]). It is the initial objective to reach Level 3 (Defined) in all process areas. Level 3

(highest level is 5) means that e.g. for the development activities: "The software process for both management and engineering activities is documented, standardized, and integrated into a standard software process for the organization. All projects use an approved, tailored version of the organization's standard software process for developing and maintaining software".

The main measurement challenge is in the area of *Security and safety*. Today the focus is on the occurrence and management of major incidents and the findings and responses to audit reports in key areas. It is the intent to work on an overall security and risk management scorecard with the two internal audit organizations which will indicate how well IT is managing the risks of new technologies and the operational changes introduced.

Responsiveness is an objective that is focused on the timeliness in which IT delivers its services: from the point of demand to readiness for use. Operational processes are measured by the process cycle time or the time taken to complete an operational transaction. An example is an order for a new PC workstation. Application services are typically project-oriented and are measured by the time taken to develop, enhance or change systems for market use, i.e. time to market.

The measures for *Backlog management and aging* capturing the number of days of efforts of work in backlog status and the number of days outstanding of the oldest budgeted work item are very traditional and self evident.

Objective	Measures	Benchmarks
Process excellence	• Process maturity rating • Quality dimension of process performance	• SEI & ITIL assessments • Compass benchmarking service

	• Cost dimension of process performance • Speed dimension of process performance	• Compass benchmarking service • Compass benchmarking service
Responsiveness	• Process cycle time • Systems time to market	• To be determined
Backlog management and aging	• Number of days of effort of budgeted work in backlog status • Number of days outstanding of oldest budgeted work item	• Past performance
Security and safety	• Absence of major issues in Internal/External Audit reports • Absence of major unrecoverable failures or security breaches	• Not applicable

Figure 7. Operational excellence scorecard

7. Future orientation perspective

The future orientation perspective shows the performance of IT from the viewpoint of the IT organization itself: process owners, practitioners and support professionals. The future perspective provides answers to stakeholder questions regarding IT's readiness for future challenges (cf. Figure 3). The issues focused on, as depicted in Figure 8, are service capability improvement, staff management effectiveness, enterprise architecture evolution, and emerging technologies research.

The use of benchmarks will be primarily related to the level of internal investments in processes and people, and will be drawn from the markets in which the merged IT division operates. Beyond the relationship between such investments and the improvements in service delivery, customer satisfaction, etc., these factors influence the ability to attract and retain the best IT professionals. Management is interested in knowing how their organization is positioned in the minds of current and future IT employees as an employer of choice.

Service capability improvement is an objective that is tracked through the delivery of internal improvement projects. These projects have been focused on improving the effectiveness or maturity level of key IT processes (such as the ITIL initiative), developing the organizational model (e.g. the recruitment of career leaders for project-assigned staff), renewing or updating the technology infrastructure or tools available to staff (e.g. the introduction of advanced testing tools to the mainframe development environment) or the improvement of professional development opportunities (e.g. the introduction of a Computer-Based Training system). The completion of these projects to plan is used as a leading indicator to expected downstream improvements in the associated IT processes or services.

Staff management effectiveness is measured by Career Centers (centers of excellence for primary skill sets e.g. project management) as there is concern for developing, retaining and deploying the right skill numbers and mixes. The primary measures are utilization/billable ratios, voluntary turnover by performance level, percent of staff with completed professional development plans, and percent of work done by contractors. Staff utilization/billable ratios measure the effectiveness of the staff deployment process. Voluntary turnover is tracked by staff performance level, particularly "Meets Expectations" and above, as there is strong desire to limit such turnover in the top performing levels. The other measures focus on the effectiveness of professional development programs and work planning processes.

Enterprise architecture evolution is measured by progress in evolving and updating the Enterprise Architecture Plan (EAP) and the degree of adherence to that plan. A plan and interim set of goals have been established for 2000 that will be used to indicate successful progress toward the development of a comprehensive EAP. Success will be measured by the achievements of these goals. The EAP dictates certain architectural and technical standards for application and technical systems that form the basis for measuring systems compliance (i.e. adherence to the EAP).

One of the measurement challenges that is faced with respect to *Emerging technologies research* is finding good comparative data in the area of emerging technologies research. It is the intent to find the level of investment that yields the maximum benefit to the organization. There seems to be little information available on how much organizations are spending on technology research, either in absolute money or as a percentage of the total IT budget.

Objective	Measures	Benchmarks
Service capability improvement	• Internal process improvement • Organizational development • Technology renewal • Professional development	• Market comparison
Staff management effectiveness	• Utilization/billable ratios • Voluntary turnover by performance level • % of staff with completed professional development plans • % of work done by contractors	• Industry comparison • Market comparison • Not applicable • Planned level
Enterprise architecture evolution	• Development of Enterprise Architecture Plan (EAP) • Systems adherence to EAP and technology standards	• Not applicable
Emerging technologies	• % of IT budget allocated to research new and updated technologies	• Comparison to competitors

Figure 8. Future orientation scorecard

8. Maturity of the current IT BSC

As we indicated in the introduction of this paper, the concepts of an IT BSC at this point are relatively new for most business organizations. A question may be whether the IT BSC of the case company can be qualified as a good or best practices case compared to other developments? To answer this question we will, hereafter, develop a maturity model for the IT balanced scorecard and match the case company's scorecard practice against this model.

The proposed Maturity Model (MM) for the IT balanced scorecard is based on Software Engineering Institute's Capability Maturity Model CMM [3]. Our IT BSC Maturity Model highlights five maturity levels with the following characteristics (Figure 9):

Level 1 Initial
There is evidence that the organization has recognized there is a need for *a measurement system* for its information technology division. There are ad hoc approaches to measure IT with respect to the two main IT processes, i.e. operations and systems development. This measurement process is often an individual effort in response to specific issues.

Level 2 Repeatable
Management is aware of the concept of *the IT balanced scorecard* and has communicated its intent to define appropriate measures. Measures are collected and presented to management in a scorecard. Linkages between outcome measures and performance drivers are generally defined but are not yet precise, documented or integrated into strategic and operational planning processes. Processes for scorecard training and review are informal and there is no compliance process in place.

Level 3 Defined
Management has standardized, documented and communicated the IT BSC through formal training. The scorecard process has been structured and *linked to business planning cycle*. The need for compliance has been communicated but compliance is inconsistent. Management understands and accepts the need to integrate the IT BSC within the alignment process of business and IT. Efforts are underway to change the alignment process accordingly.

Level 4 Managed
The IT BSC is fully integrated into the strategic and operational planning and review systems of the business and IT. Linkages between outcome measures and performance drivers are systematically reviewed and revised based upon the analysis of results. There is a full understanding of the issues at all levels of the organization which is supported by formal training. Long term stretch targets and priorities for IT investment projects are set and linked to the IT scorecard. A business scorecard and *a cascade of IT scorecards* are in place and are communicated to all employees. Individual objectives of IT employees are connected with the scorecards and incentive systems are linked to the IT BSC measures. The compliance process is well established and levels of compliance are high.

Level 5 Optimized
The IT BSC is fully aligned with the business strategic management framework and vision is frequently reviewed, updated and improved. Internal and external experts are engaged to ensure industry best practices are developed and adopted. The *measurements* and results are part of management reporting and *are systematically acted upon* by senior and

IT management. Monitoring, self-assessment and communication are pervasive within the organization and there is optimal use of technology to support measurement, analysis, communication and training.

Figure 9. The IT Balanced Scorecard Maturity Model

According to this IT BSC maturity model the case company is at the "Repeatable" stage (Level 2). The challenge is to reach stage 4, the "Managed" level within two to three years. It is understood that major milestones in this further development will be:

- output measures and performance drives have to be systematically identified,
- the cause-and-effect relationships between these two measures have to be established,
- the IT scorecard has to be linked with the business scorecard and the IT/business alignment process,
- short and long term targets have to be defined,
- individual and group objectives of IT employees have to be linked to the IT BSC,
- the scorecards have to be integrated in the strategic and operational management processes.

IT management is now in the process of determining how they might progress in terms of maturity level over time. The ultimate goal is to reach the "Managed" Level 4. Based on our maturity model of Figure 9, these actions for the two subsequent years should put the case company close to Level 4. It is the belief of the CIO that to date these plans are realistic but that "this desired timeline is probably quite optimistic and it may well take twice as long to accomplish these changes". However, the most important aspect is that all stakeholders in the process are engaged by the end of 2000 and that progress is made each subsequent year.

9. Lessons learned

The following lessons can be attributed to this IT BSC case:

1. Start simultaneously constructing a business and IT scorecard.
The IT BSC within the case company was started within the IT organization primarily with the objective to ensure that IT is fairly evaluated by the business. This is a rather defensive approach and focuses merely on the internal IT processes. Although it is clearly recognized within the case company, that a more explicit linkage with the business (with a business balanced scorecard) has to be developed and supported, the question still remains whether it is more appropriate (a) to start with a business balanced scorecard followed by the subsequent creation of the corresponding IT scorecards or (b) to develop both scorecards simultaneously? It is now our conclusion that it is probably ideal to start simultaneously with both scorecards which requires both IT and senior management to discuss the

opportunities of information technologies which supports the IT/business alignment and IT governance process.

2. Consider the scorecard as a supportive mechanism for IT/business alignment and IT governance.
Recurring issues in IT practice and IT academic publications focus on how to align IT and business and how to control IT. It is our strong belief that a cascade of business and IT balanced scorecards may support both processes. However, as is shown in this case study, the balanced scorecard is only a technique that can only be successful if the business and IT work together and act upon the measurements of the scorecards. The balanced scorecard approach will only have results when other mechanisms such as a well functioning Board and IT Steering Committee are in place.

3. Consider the construction and implementation of an IT balanced scorecard as an evolutionary project.
Constructing an IT balanced scorecard is not a one week project. It requires considerable time and other major resources. Moreover, it is a project that is to be matured over time and that is characterized by different stages as is illustrated by the IT BSC Maturity Model introduced in this paper. This iterative approach is confirmed by this case. The described IT BSC began at a lower level with actions currently in place to reach a higher level where a more explicit connection exists between outcome measures and performance drivers, and where an explicit linkage is established with business requirements.

4. Provide a formal project organization
Good project management is a critical success factor for effective construction and implementation of an IT balanced scorecard. IT management of the case company confronted with the question of how the IT BSC project was organized, had to admit that there was no real formal organization in place and that this delayed the progress of its implementation. Currently, the sponsor of the IT BSC is the CIO, and the project leader is the Director of Management Services who is responsible for the management practices of the IT division. A formal project team to support the further development will be established with other key IT people along with key business representatives.

5. Provide best IT practices.
Introducing an IT balanced scorecard in an IT environment with poor management and IT practices is too large a challenge. The implementation of the IT BSC within the case company was certainly supported by practices already in place such as ROI-evaluation of

IT projects, the existence of IT steering committees, service level practices, etc. If it is decided to implement e.g. the Information Economics approach to score and evaluate projects and to integrate this method within the IT BSC, this will take considerable time and is to be seen as a separate project.

10. Conclusion

In this paper, the development and implementation of an IT balanced scorecard within a large Canadian financial services group is described and discussed. It was shown that building and implementing such a scorecard is a project that needs substantial human and financial resources. Furthermore, setting up an IT BSC is a project that is characterized by different phases in time. The current status of the case scorecard is Level 2 of the IT BSC Maturity Model that is introduced in this paper. This implies that the case IT scorecard to-date has to be linked with the business scorecard to support the IT/business alignment process and the IT governance process. Currently, a plan for the next two years has been developed with the objective to build a mature IT BSC explicitly linked to the business. It is recognized within the case company that this will be a great challenge for both IT and business people.

References

[1] Gold, C. "Total quality management in information services – IS measures: a balancing act", *Research Note Ernst & Young Center for Information Technology and Strategy,* Boston, 1992.

[2] Kaplan, R. and D. Norton, *The balanced scorecard: translating vision into action,* Harvard Business School Press, Boston, 1996.

[3] Paulk, M., B. Curtis, M.-B. Chrissis, and C. Weber, "Capability maturity model for software, version 1.1", *Technical Report Software Engineering Institute,* CMU/SEI-93-TR-024, ESC-TR-93-177, February 1993.

[4] Saull, R. "The IT Balanced Scorecard – A roadmap to effective governance of a shared services IT organization", *Information Systems Control Journal* (previously *IS Audit and Control Journal*), Volume 2, 2000, pp. 31-38.

[5] Van der Zee, J. "Alignment is not enough: integrating business and IT management with the balanced scorecard", *Proceedings of the 1st Conference on the IT Balanced Scorecard,* Antwerp, March 1999, pp. 1-21.

[6] Van Grembergen, W. and R. Van Bruggen, "Measuring and improving corporate information technology through the balanced scorecard technique", *Proceedings of the Fourth European Conference on the Evaluation of Information technology*, Deflt, October 1997, pp. 163-171.

[7] Van Grembergen, W. and D. Timmerman, "Monitoring the IT process through the balanced score card", *Proceedings of the 9th Information Resources Management (IRMA) International Conference*, Boston, May 1998, pp. 105-116.

[8] Van Grembergen, W. "The balanced scorecard and IT governance", *Information Systems Control Journal* (previously *IS Audit & Control Journal),* Volume 2*,* 2000, pp.40-43.

[9] Willcocks, L. *Information management. The evaluation of information systems investments,* Chapman & Hall, London, 1995.