



Government of Ontario IT Standard (GO-ITS)

GO-ITS Number 56.4

OPS Business Intelligence Reference Model

Version #: 1.0

Status: Approved

Prepared for the Information Technology Standards Council (ITSC) under the delegated authority of the Management Board of Cabinet

Copyright & Disclaimer

Government of Ontario reserves the right to make changes in the information contained in this publication without prior notice. The reader should in all cases consult the Document History to determine whether any such changes have been made.

© 2009 Government of Ontario. All rights reserved.

Other product or brand names are trademarks or registered trademarks of their respective holders. This document contains proprietary information of Government of Ontario, disclosure or reproduction is prohibited without the prior express written permission from Government of Ontario.

Template Info

Template Name	Template #	Template Version No.	Template Author	Template Completion Date
GO-ITS Template	09.03.26	2.0	Design: PMCoE Boilerplate: TAB/OCCTO	2009-03-26

Document History (including ITSC and ARB approval dates)

Date	Summary
2009-06-25	Created: GO-ITS 56.4 <i>OPS Business Intelligence Reference Model</i> .
2009-06-26	Updated: <ul style="list-style-type: none"> ○ Changes to In Scope/Out-of-Scope section 2.2. Draft version number set to 0.51
2009-07-10	Updated: <ul style="list-style-type: none"> ○ OPS Business Analytics has been added to the section 2.2.2 (Out of Scope) ○ Dates for consulted organizations were confirmed and HSC was added to the list of consulted organizations ○ Business analytics has been added to section 1.4 of Appendix A ○ Words such as 'analyze', 'analytics' and 'analytic' in Appendix A have been changed to 'basic data analysis' to further reflect that OPS Business Analytics is Out of Scope and that Business Intelligence still has some 'basic analysis' capabilities ○ Draft set to version 0.54
2009-08-11	Updated: <ul style="list-style-type: none"> ○ Changes made in Appendix A based on comments received to-date ○ Draft set to version 0.55
2009-08-19	Updated and Endorsed: <ul style="list-style-type: none"> ○ Definition for 'Scorecard' added to Appendix A, page 13, based on input from ITSC members ○ IT Standards Council endorsement ○ Draft set to version 0.56
2009-09-24	Approved: <ul style="list-style-type: none"> ○ Architecture Review Board approval ○ Approved version number set to version 1.0

Table of Contents

1. FOREWORD	4
2. INTRODUCTION	5
2.1. Background and Purpose	5
2.2. Scope	5
2.2.1. In Scope	5
2.2.2. Out of Scope	5
2.3. Applicability Statements	6
2.3.1. Organization	6
2.4. Requirements Levels	6
2.5. Contact Information	7
2.5.1. Roles and Responsibilities	7
2.6. Recommended Versioning and/or Change Management	9
2.7. Publication Details	9
3. TECHNICAL STANDARDS AND SPECIFICATIONS	10
3.1. Purpose of Business Intelligence Reference Model (see Appendix A)	10
3.2. Focus	10
4. RELATED STANDARDS	10
4.1. Impacts to Existing Standards	10

1. Foreword

Government of Ontario Information Technology Standards (GO-ITS) are the official publications on the guidelines, preferred practices, standards and technical reports adopted by the Information Technology Standards Council (ITSC) under delegated authority of the Management Board of Cabinet (MBC). These publications support the responsibilities of the Ministry of Government Services (MGS) for coordinating standardization of Information & Information Technology (I&IT) in the Government of Ontario. Publications that set new or revised standards provide enterprise architecture guidance, policy guidance and administrative information for their implementation. In particular, GO-ITS describe where the application of a standard is mandatory and specify any qualifications governing the implementation of standards.

2. Introduction

2.1. Background and Purpose

The Office of the Corporate Chief Technology Officer (OCCTO) has recognized that although business intelligence (BI) functionality is a widespread business need in the OPS there was no common understanding of its meaning. In response, OCCTO has directed the establishment a common understanding of BI functionality by following the OPS Enterprise Architecture approach for defining programs and services. This culminated in a Business Intelligence Reference Model.

This reference model provides an abstract representation of Business Intelligence in the context of government programs and services. It is intended for OPS ministries and agencies that are considering the adoption of a business intelligence approach to planning and managing their operations. It is also intended to help Business Planners, Policy Analysts, Business Analysts, Program Managers, Service Providers and Business Architects gain a common understanding of what BI is along with the generic business functions involved.

The Business Intelligence Reference Model must be followed by all OPS I&IT projects considering the adoption of BI functionality within automated solutions.

2.2. Scope

2.2.1. In Scope

- Identification of common business functions of business intelligence that can be represented generically
- Selected business architecture artefacts to describe a generic business intelligence business model
- Types of business rules to consider for a business intelligence business model

2.2.2. Out of Scope

- Identification of business functions that support the delivery of a program using a business intelligence approach but are not specific to business intelligence (e.g. Data Mining, transaction based approaches)
- Identification of business functions that are part of business intelligence in one sector but not in others (e.g. virtual visualization)
- An end-to-end business architecture for business intelligence including all artefacts
- Information/data model to support business intelligence. Information requirements will be business specific
- Business rule source instances or business rule statement instances (i.e., business specific)
- Business analytics¹

¹ Business Analytics refers to the skills, technologies, applications and practices for continuous iterative exploration and investigation of past business performance to gain insight and drive business planning. The discipline is focused on developing new insights and understanding of business performance based on deep statistical and quantitative analysis, data mining, explanatory and predictive modeling and fact-based and integrated risk management.

2.3. Applicability Statements

2.3.1. Organization

Government of Ontario IT Standards and Enterprise Solutions and Services apply (are mandatory) for use by all ministries/clusters and to all former Schedule I and IV provincial government agencies under their present classification (Advisory, Regulatory, Adjudicative, Operational Service, Operational Enterprise, Trust or Crown Foundation) according to the current agency classification system.

Additionally, this applies to any other new or existing agencies designated by Management Board of Cabinet as being subject to such publications, i.e. the GO-ITS publications and enterprise solutions and services - and particularly applies to Advisory, Regulatory, and Adjudicative Agencies (see also procurement link, OPS paragraph). Further included is any agency which, under the terms of its Memorandum of Understanding with its responsible Minister, is required to satisfy the mandatory requirements set out in any of the Management Board of Cabinet Directives (cf. Operational Service, Operational Enterprise, Trust, or Crown Foundation Agencies).

As new GO-IT standards are approved, they are deemed mandatory on a go-forward basis (Go-forward basis means at the next available project development or procurement opportunity).

When implementing or adopting any Government of Ontario IT standards or IT standards updates, ministries and I&IT Cluster must follow their organization's pre-approved policies and practices for ensuring that adequate change control, change management and risk mitigation mechanisms are in place and employed.

For the purposes of this document, any reference to ministries or the Government includes applicable agencies.

2.4. Requirements Levels

Within this document, certain wording conventions are followed. There are precise requirements and obligations associated with the following terms:

Must	This word, or the terms "REQUIRED" or "SHALL", means that the statement is an absolute requirement.
Should	This word, or the adjective "RECOMMENDED", means that there may exist valid reasons in particular circumstances to ignore the recommendation, but the full implications (e.g., business functionality, security, cost) must be understood and carefully weighed before

2.5. Contact Information

2.5.1. Roles and Responsibilities

Accountable Role Definition

The individual ultimately accountable for the process of developing this standard. There must be exactly one accountable role identified. The accountable person also signs off as the initial approver of the proposed standard before it is submitted for formal approval to ITSC and ARB. (Note: in the OPS this role is at a CIO/Chief or other senior executive level).

Accountable Role:

Head, Technology Adoption Branch (TAB), Office of the Corporate Chief Technology Officer (OCCTO), Ministry of Government Services (MGS)

Responsible Role Definition

The organization responsible for the development of this standard. There may be more than one responsible organization identified if it is a partnership/joint effort. (Note: the responsible organization provides the resource(s) to develop the standard).

Responsible Organizations:

The organizations responsible for the development of this standard are

- Corporate Architecture Branch, OCCTO, MGS
- Technology Adoption Branch, OCCTO, MGS

Support Role Definition

The support role is the resource(s) to whom the responsibility for actually completing the work and developing the standard has been assigned. If there is more than one support role, the first role identified should be that of the editor – the resource responsible for coordinating the overall effort.

Support Role (Editor):

Ministry/Cluster: MGS

Division: OCCTO

Branch: TAB

Section: ITSM & IT Standards

Job Title: Technical Standards Coordinator

Name: Brian Bisailon

Phone: 416-212-0940

Email: brian.bisailon@ontario.ca

Consulted

Please indicate who was consulted as part of the development of this standard. Include individuals (by role and organization) and committees, councils and/or working groups.

(Note: consulted means those whose opinions are sought, generally characterized by two-way communications such as workshops):

Organization Consulted (Ministry/Cluster)	Division	Branch	Date
MGS	OCCTO	CAB / Business Architecture	2009-06-25

Committee/Working Group Consulted	Date
Health Services Cluster (HSC)	2009-07-10
Solutions Delivery Leadership Committee (SDLC)	2009-08-13

Informed

Please indicate who was informed during the development of this standard. Include individuals (by role and organization) and committees, councils and/or working groups.

(Note: informed means those who are kept up-to-date on progress, generally characterized by one-way communication such as presentations):

Committee/Working Group Informed	Date
Architecture Core Team (ACT)	2009-09-03

2.6. Recommended Versioning and/or Change Management

Changes (i.e. all revisions, updates, versioning) to the standard require authorization from the “responsible” organization.

Once a determination has been made by the responsible organization to proceed with changes, the Standards Section, Technology Adoption Branch, OCCTO, will coordinate and provide assistance with respect to the approvals process.

The approval process for changes to standards will be determined based on the degree and impact of the change. The degree and impact of changes fall into one of two categories:

Minor changes - requiring communication to stakeholders. No presentations required. No ITSC or ARB approvals required. Changes are noted in the “Document History” section of the standard;

Major changes - requiring a presentation to ITSC for approval and ARB for approval (Note: ARB reserves the right to delegate their approval to ITSC)

Below are guidelines for differentiating between minor and major changes:

Major:

- represents a major version change to one or more specifications
- impacts procurement
- requires configuration changes to current solutions
- impacts other standards
- responds to legislative, policy or procurement changes

Minor:

- represents incremental version changes to one or more specifications
- does not impact procurement (other than informational)
- does not require configuration changes to current solutions
- does not impact other standards
- is not related to legislative, policy, or procurement changes

2.7. Publication Details

All approved Government of Ontario IT Standards (GO-ITS) are published on the ITSC Intranet web site. Please indicate with a checkmark below if this standard is also to be published on the public, GO-ITS Internet Site.

Standard to be published on both the OPS Intranet and the GO-ITS Internet web site (available to the public, vendors etc.)	<input checked="" type="checkbox"/>
--	-------------------------------------

3. Technical Standards and Specifications

3.1. Purpose of Business Intelligence Reference Model (see Appendix A)

This standard provides a common understanding of what 'business intelligence' (BI) is and what common functions contribute to the development of a business model using a BI strategy. This reference model supports business improvement, architecture improvement and provides the foundation for I&IT solution decisions.

3.2. Focus

This reference model is intended to be a higher-level generic model from which more detailed modeling can be developed based on specific business needs. The functions described in this document are business driven, not technology driven.

Mandatory Sections of the Standard

What is covered?

- Formal definition and characteristics
- Party and Role Types
- Client Needs
- Key Business Functions
- Generic information / data requirements to support BI
- Types of business rules to consider

What is not covered?

- Identification of business functions that are part of BI in one sector but not in others
- Business rule source instances or business rule statement instances (i.e., business specific)

4. Related Standards

4.1. Impacts to Existing Standards

Identify any Standards that reference or are referenced by this Standard and describe the impact.

GO-IT Standard	Impact	Recommended Action
GO-ITS 30.3 <i>OPS Business Intelligence Software</i>	Business sponsor and/or lead organization to provide lessons learned vis-à-vis gap-fit analysis between reference model and product standard – important for refinement of the model over time	Maintain alignment between GO-ITS 30.3 and this standard

Government of Ontario IT Standard (GO-ITS)

Number 56.4

OPS Business Intelligence Reference Model

Appendix A

Version #: 1.0

Status: Approved

Prepared for the Information Technology Standards Council (ITSC) under the delegated authority of the Management Board of Cabinet



Preface

The Ontario Public Service (OPS) has developed an enterprise architecture program to:

- Enable the transformation of the programs and services of the Ontario Government,
- Increase its return on investment in information and information technology.

Business architecture is an integral part of enterprise architecture and is intended to ensure the alignment of I&IT with business needs. Business Intelligence is a widespread business need in the OPS and there is currently no common understanding of its meaning.

Objectives

This reference model provides an abstract representation of **Business Intelligence** in the context of government programs and services. It is intended for OPS ministries and agencies that are considering the adoption of a Business Intelligence Tool Set.

The document is intended to help readers to:

- Gain a common understanding of what Business Intelligence is and the generic business functions involved when a Business Intelligence approach is applied;



Readers

The reference model is intended for the following readers.

Reader	Use of the Document
Business Planners, Policy Analysts, Business Analysts	<ul style="list-style-type: none">• Support for business transformation or program review of government programs and services involving Business Intelligence.
Program Managers	<ul style="list-style-type: none">• Encourages a focus on client needs and delivering value• Supports Business Intelligence business model identification and design
Service Providers	<ul style="list-style-type: none">• Supports improvement of service performance• Supports design of more cost effective service delivery processes
Change Initiative Project Managers & Business Architects	<ul style="list-style-type: none">• Ensures that business transformation initiatives define business intelligence business models consistently across the OPS to support service transformation and integrated service delivery• Ensures that business intelligence business models are well formed to support alignment of information systems with business intelligence requirements.



Table of Contents

Preface.....	2
Table of Contents.....	4
List of Figures.....	4
List of Tables.....	4
1 Introduction.....	5
1.1 Problem Description.....	5
1.2 Why Business Intelligence.....	6
1.3 Purpose of this Document.....	6
1.4 In Scope / Out of Scope.....	6
2 Definition and Characteristics of Business Intelligence.....	8
3 Business Architecture Artefacts.....	9
3.1 Party and Role Types.....	9
3.2 Client Needs.....	10
3.3 Goals.....	11
3.4 Business Functions.....	12
3.4.1 Business Functions.....	13
3.4.2 Business Function Descriptions.....	13
3.4.3 Business Support Functions.....	14
3.4.4 Business Support Function Descriptions.....	15
3.5 Business Rule Types.....	17
4 Summary.....	18

List of Figures

Figure 1: Business Functions.....	12
Figure 2 - Business Functions.....	13
Figure 3 - Business Support Functions.....	14

List of Tables

Table 1: Definitions.....	8
Table 2: Party and Role Types.....	10
Table 3 - Need Types.....	11
Table 4 - Business Support Function Descriptions.....	16
Table 5 - Business Rule Types.....	17

1 Introduction

Business Intelligence (BI) as a business model is common in the delivery of many Ministry programs. The number of Business Intelligence tools/solutions in the OPS is large and increasing rapidly. However, the concept of business intelligence is not well understood which makes aligning business needs with I&IT solutions a challenging task.

Reference Models currently exist for other types of business functionality (e.g., Case Management, Grants Management and Client Relationship Management) but there is no known industry standard reference model for Business Intelligence.

1.1 Problem Description

In the OPS many organizations use (or have a need for) business intelligence to meet the needs of their clients. Moving to a business intelligence business model is a complex business transformation that can be supported by automated tools. Acquiring and implementing automated tools can be an expensive proposition requiring transformation initiatives to go through the OPS Gateway process, including architecture review and governance.

While all organizations begin their BI initiatives with the expectation of success, many struggle to align their technology approach to BI with specific business goals and objectives and as a result, deliver solutions that fail to meet business needs.

The Corporate architecture governance bodies (ACT/ARB) have reviewed a number of business intelligence initiatives and found a wide variation in understanding by project teams and the resultant business architectural modelling and design.

“The mission of the BI program is the empowerment of business improvement opportunities for its sponsors through the delivery of information to the business community reflective of business processes and outcomes with appropriate level(s) of formatting, timeliness, history, detail and quality to provide a reliable foundation for targeted business improvements.”

The desired outcome of defining a Business Intelligence business model via this document is to ensure that any automated tool that is chosen is the appropriate one, and is configured to meet a business intelligence business need.



1.2 Why Business Intelligence

Business Intelligence is a decisions support mechanism that can provide professionals with the information they need to make the most effective decisions for their organization. When the information is easily and rapidly accessible in order to take appropriate action or make the right decision, it contributes to business success.

1.3 Purpose of this Document

The purpose of this document is to provide a common understanding of what business intelligence is and what common functions contribute to the development of a business intelligence business model. The Business Intelligence Reference Model (BIRM) is intended to be a higher level generic model in which more detailed framework models can be developed based on more specific business needs. The functions described in this document are business driven, not technology driven.

This document supports business improvement, architecture improvement and provides the foundation for I&IT solution decisions. It provides the criteria for a business intelligence business model and provides abstract models, which can be instantiated for specific program area instances of business intelligence business models.

1.4 In Scope / Out of Scope

In Scope	Out-of-Scope
Identification of common business functions of business intelligence that can be represented generically.	<p>Identification of business functions that support the delivery of a program using a business intelligence approach but are not specific to business intelligence (e.g. Data Mining, transaction based approaches).</p> <p>Identification of business functions that are part of business intelligence in one sector but not in others (e.g. virtual visualization).</p>
Selected business architecture artefacts to describe a generic business intelligence business model.	<p>An end-to-end business architecture for business intelligence including all artefacts.</p> <p>Information/data model to support business intelligence. Information</p>



	requirements will be business specific.
Types of business rules to consider for a business intelligence business model.	Business rule source instances or business rule statement instances (i.e., business specific).
	<p>Business Analytics:</p> <p>This refers to the skills, technologies, applications and practices for continuous iterative exploration and investigation of past business performance to gain insight and drive business planning.</p> <p>The discipline is focused on developing new insights and understanding of business performance based on deep statistical and quantitative analysis, data mining, explanatory and predictive modeling and fact-based and integrated risk management.</p>

2 Definition and Characteristics of Business Intelligence

This section provides an OPS definition of business intelligence and reference model. Many definitions were examined through an environmental scan and the following definitions were adapted from existing definitions.

Term	Definition
Business Intelligence	Business intelligence allows people at different levels of an organization to access, interact with, and perform basic data analysis to manage the business, improve performance, discover opportunities and operate efficiently. It means leveraging information assets to achieve improved business performance by providing a deeper understanding of what is going on and allows businesses to monitor the progress that is being made toward the business's strategic goals. It is a key component of business performance management.
Reference Model	An abstract representation of a problem space, and forms the conceptual basis for the development of more concrete models of the space, and ultimately implementations ¹

Table 1: Definitions

Business Intelligence foundation should provide the most comprehensive business intelligence (BI) and basic data analysis capabilities available via interactive dashboards, ad hoc analysis, proactive detection and alerts, advanced reporting, publishing and basic data analysis for mobile users.

A Business Intelligence business model has a number of key characteristics. These include:

- **Pervasive**—Deliver intuitive, role-based intelligence for everyone in an organization—from front line employees to senior management—that enables better decisions, actions, and business processes.
- **Comprehensive**—Integrate information from the financial performance management, operational intelligence, and transactional applications.
- **Reuse**—Use the existing data sources and systems.

A business initiative that has these characteristics qualifies as a business intelligence initiative. Business Intelligence is not defined by the functionality of a supporting tool that must be configured to support the “to be” business intelligence business model.

¹ Source: Wikipedia (www.wikipedia.org)

3 Business Architecture Artefacts

This section contains selected Business Architecture artefacts that describe a generic Business Intelligence business model. Descriptions of these artefacts can be found in the OPS EA Review Requirements Guidebook on the OCCTO intranet site. These generic artefacts are intended to be used as a reference when developing artefacts for a specific business model.

3.1 Party and Role Types

Business Intelligence program delivery involves a wide range of roles played by organizations and individuals. The table below identifies the key roles and parties of interest to the program. This table can be used as a starting point in analyzing the roles required to implement solutions requiring BI.

Role	Description	Cross-Reference
		Party or Parties playing the role
Analysts (Policy, business, auditors etc)	<p>This role makes use of the information available as a result of BI initiative for basic data analysis, auditing, making decisions as part of solving a larger issue.</p> <p>As an analyst this role gathers, prepares and disseminates information and delivers the back office functions required to support business intelligence and delivers output to the clients.</p> <p>Analysts support operations managers with performance management analysis. Analysts require a powerful and interactive environment that allows them to create metrics and navigate the data in an ad-hoc setting. This type of user requires tools for basic analysis, statistics, predictive modeling and advanced visualization.</p> <p>As auditors this role is accountable for compliance and monitoring.</p> <p>As policy regulators this role creates regulations and policies by analyzing trends etc.</p>	Individual

Role	Description	Cross-Reference
		Party or Parties playing the role
Executives and Managers	Managers at all levels need BI to assist them in making informed business decisions. This type of business user requires a friendly query environment that also supports the ability to generate ad hoc reports and delivery mechanisms that enable managers to disseminate information up and down the chain of command. Their objective is to make strategic business decisions feeding into policy making.	Individual
Power Users	<p>These are IT Report developers, information workers that make available the Business Intelligence information to the other roles for their consumption.</p> <p>This type of role requires BI that is embedded in a production application, rather than consuming BI as part of a BI application.</p>	Individual

Table 2: Party and Role Types

3.2 Client Needs

Table 3 lists the needs to be satisfied by a program using a business intelligence strategy with respect to both the client and the service provider. A need is a condition or situation in which something is required, desirable or useful or a given target group. The need would be to provide compliance, effectiveness, efficiency, consistency, fairness, access, convenience, quality and knowledge in delivering services using a business intelligence strategy.

Client Needs	Description
Align Key Performance Indicators to Strategic Objectives	Need to be convinced that data driven or evidence based decisions really work.
Self service reporting	Need to have self-reliance for reporting since consumers of reports need flexibility.
Proactive Response to trends	Need to respond proactively to unexpected patterns or trends to be able to better prepare for any unforeseen changes. This will help in establishing Early Warning Systems and Detection of Trends.



Client Needs	Description
Decision Making	Need to improve tactical, routine and operational decision making (Intuitive Decision Making and Rational Decision Making) by identifying relevant Patterns and Insights.
Alerts	Need to get an alert when things go astray or are staying on course.

Table 3 - Need Types

3.3 Goals

Primary Goals

- Improve Business Performance
- Support decision-making and reporting with reliable data;
- Increase transparency and access to ministry information;

The Outcomes

Empowerment of business improvement opportunities: the business program area seeks specific business improvements requiring improved service delivery via this program. Typically this is the first step toward defining desirable business outcomes from enhanced decision support and analysis.

Delivery of information to the business area reflective of business processes and outcomes: a formal requirement is proactive delivery of business information in a manner that is reflective of processes and outcomes. Information is usually not pre-formatted to reflect its origins. Information intended for delivery must be designed and integrated in a manner consistent with the business processes from which it is generated.

With appropriate level(s) of formatting, timeliness, history, detail and quality: the information delivered through the BI organization must be modeled to allow users to view information under a variety of business structures and hierarchies. The design must also be flexible to allow those structures to be updated as business organizations and processes change over time. The BI organization must support changing business structures and states, not just structures that are relevant at the time of initial design and deployment. It also must support different requirements from different business user groups across time.

In Summary

1. Provide business program areas with clear opportunities to improve their business performance through information delivery.
2. Deliver information to the business community reflective of its processes and their outcomes.
3. Provide appropriate levels of reporting, timeliness, history, detail and quality as are specified in business validated release or project specifications.

3.4 Business Functions

Business Intelligence helps organizations achieve their goals and objectives by giving them firstly a deeper understanding of what is going on and also feedback on how progress to the goals is being made. It is a key component of business performance management

Business intelligence has two main business functions:

Here is 'what is business intelligence' is in practical terms.

- Routine Information Delivery through reports or dashboards
- Supporting Decision making through ad hoc query and analysis

Business Function: An activity, or logical set of activities, that a business must perform in order to meet its business objectives and continue in existence. As illustrated in Figure 2, a business function may be either a service or a process ²

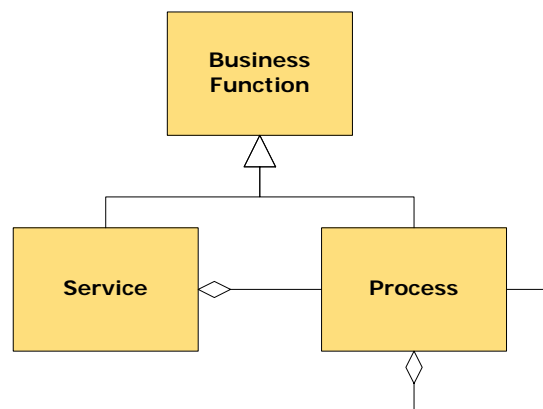


Figure 1: Business Functions

² GO-ITS 56.1 Defining Programs and Services in the OPS, section 1.3.1.

3.4.1 Business Functions

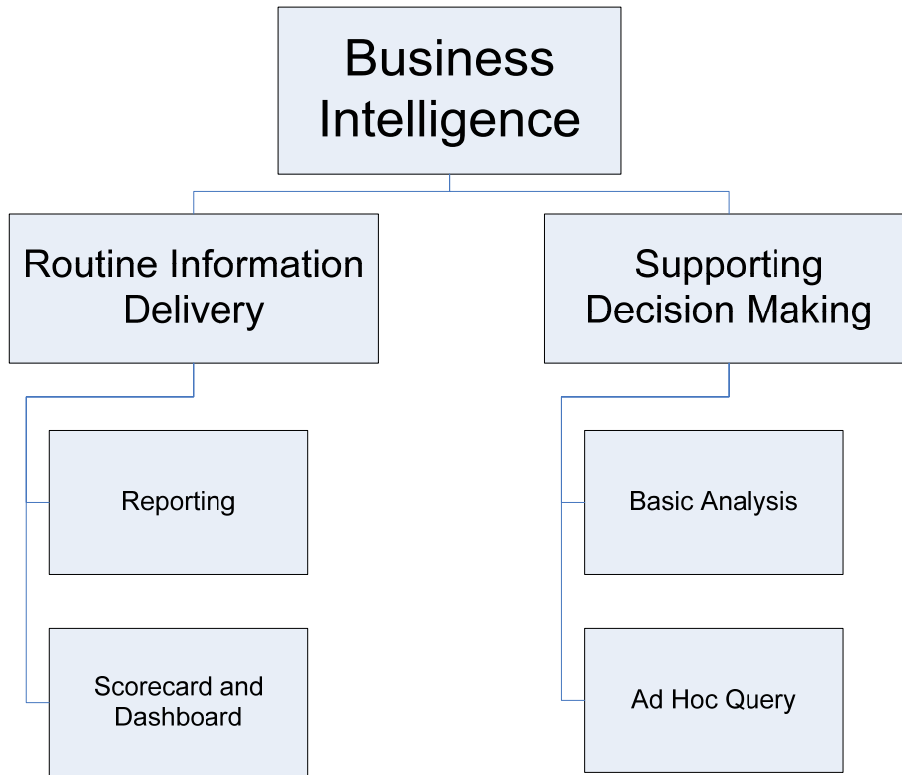


Figure 2 - Business Functions

3.4.2 Business Function Descriptions

Functions	Sub-Functions	Description
Routine Information Delivery	Reporting	This business function allows the ability to create formatted and interactive reports with highly scalable distribution and scheduling capabilities.
	Scorecard and Dashboard	<p>A scorecard is a concept for measuring whether the activities of a company are meeting its objectives in terms of vision and strategy.</p> <p>Dashboard allows the combination of multiple views into a single display. The important information needed to support the business objectives can be seen at a glance allowing to keep control. Business Dashboards can be</p>

Functions	Sub-Functions	Description
		classified into three types: strategic, analytical and tactical. This function deals with indicating the state of the performance metric, compared with a goal or target value.
Supporting Decision Making	Basic Analysis	This function refers to comparing situations and exploring. It helps to make decisions to follow the current strategic plan. It allows looking for trends and outlines the new opportunities or threats for the organizations continued success or the achievement of objectives.
	Ad-Hoc Query	This business function allows for self-service reporting. This enables users to ask their own questions, without relying on IT to create a report. In addition, this function specifies query governance and auditing capabilities to ensure that queries perform well.

3.4.3 Business Support Functions

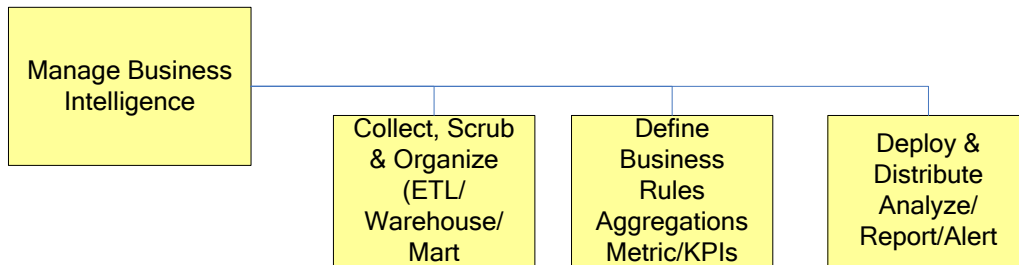


Figure 3 - Business Support Functions

3.4.4 Business Support Function Descriptions

Business Support Functions	Business Support Sub-Functions	Description
Collect, Scrub & Organize	Warehouse	A data warehouse is a collection of data extracted from the operational or transactional systems in a business, transformed to clean up any inconsistencies in identification coding and definition, and then arranged to support rapid reporting and analysis.
	Mart	<p>A data mart is a subset of a data warehouse. It is similar to a data warehouse but limited in scope and purpose and is usually aligned with one department, function, application or business unit. It could also be defined as a single domain aggregation used for reporting, analysis and decision support.</p> <p>A mart could be extracted from a data warehouse or could feed a data warehouse.</p>
	ETL	The underlying data has often to be extracted, transferred, and loaded (ETL) from a myriad of different systems into a data warehouse on which the BI software operates.
Define Business Rules	Define Meta Data	<p>Metadata would document data about data elements or attributes, (name, size, data type, etc) and data about records or data structures (length, fields, columns, etc) and data about data (where it is located, how it is associated, ownership, etc.).</p> <p>Metadata may include descriptive information about the context, quality and condition, or characteristics of the data. It may be recorded with high or low granularity.</p>
Deploy & Distribute	Basic Analysis	Analysis is a process of gathering, modeling, and transforming data with the goal of highlighting useful



Business Support Functions	Business Support Sub-Functions	Description
		information, suggesting conclusions, and supporting decision making. Basic data analysis has multiple facets and approaches, encompassing diverse techniques under a variety of names, in different domains.
	Report	Reporting includes Parameter driven reporting, Report distribution via Email and Web and Basic data derivation and summation.
	Alert	Business Intelligences relies on fast response to alerts triggered by key event points along a process chain. This in turn relies on the availability of key personnel to receive these alerts in a timely manner.

Table 4 - Business Support Function Descriptions

3.5 Business Rule Types

When an enterprise moves to a business intelligence business model, business rules are inherited from the programs and services that are involved. In addition, new business rules may be required to implement business intelligence. The new business rules are implemented in a number of instruments such as contracts, policy, regulation, memorandum of understanding, etc.

The following table highlights areas where new business rules may need to be established specific to Business Intelligence. These new rules may affect some of the existing program rules.

Rule Type	Explanation
Rules for management of information	Management of Recorded Information Directive, 1992 - This directive applies to all recorded information created or commissioned by the Ontario Government, regardless of medium of storage, or acquired from other governments, government organizations and individuals and organizations in the private sector.
Freedom of Information and privacy	Freedom of Information and Protection of Privacy Act, 1990 - The rules to provide a right of access to information under the control of institutions in accordance with the principles are defined in this ACT.
Personal Health Information	Personal Health Information Protection Act, 2004 - The purposes of this Act are, (a) To establish rules for the collection, use and disclosure of personal health information about individuals that protect the confidentiality of that information and the privacy of individuals with respect to that information, while facilitating the effective provision of health care. 2004, c. 3, Sched. A, s. 1
Security and Privacy	Information Security & Privacy Classification Policy, 2006 - This policy pertains to each ministry and agency employee and Crown appointee being personally accountable for following government security policy and procedures.
Security and Privacy	Information Security and Privacy Classification Operating Procedures - The purpose of the policy is to promote the implementation of reasonable security measures so that information and information technology resources are protected to the level necessary for the government to meet its legal, business and legislative obligations.

Table 5 - Business Rule Types

4 Summary

Business Intelligence solutions offer great benefits to an organization and can provide capabilities that can help organizations achieve efficiency and competitive advantage at any time. However, even today some aspects of BI, such as building the data foundations or badly designed dashboard, can all turn into barriers to successful deployment and adoption of BI. Many organizations get carried away by the promises of better technology but fail to address the cultural change that is required to make BI work.



Business Intelligence technology came about as a result of the need to take the 'gut feel' out of the decision-making process and to replace it with accurate, timely and pertinent information.

Business Intelligence should embed the collation, analysis, and dissemination of relevant information into the organization's operational and decision making processes at all levels.

BI should be driven by focus on performance, compliance, flexibility and change management and risk management.