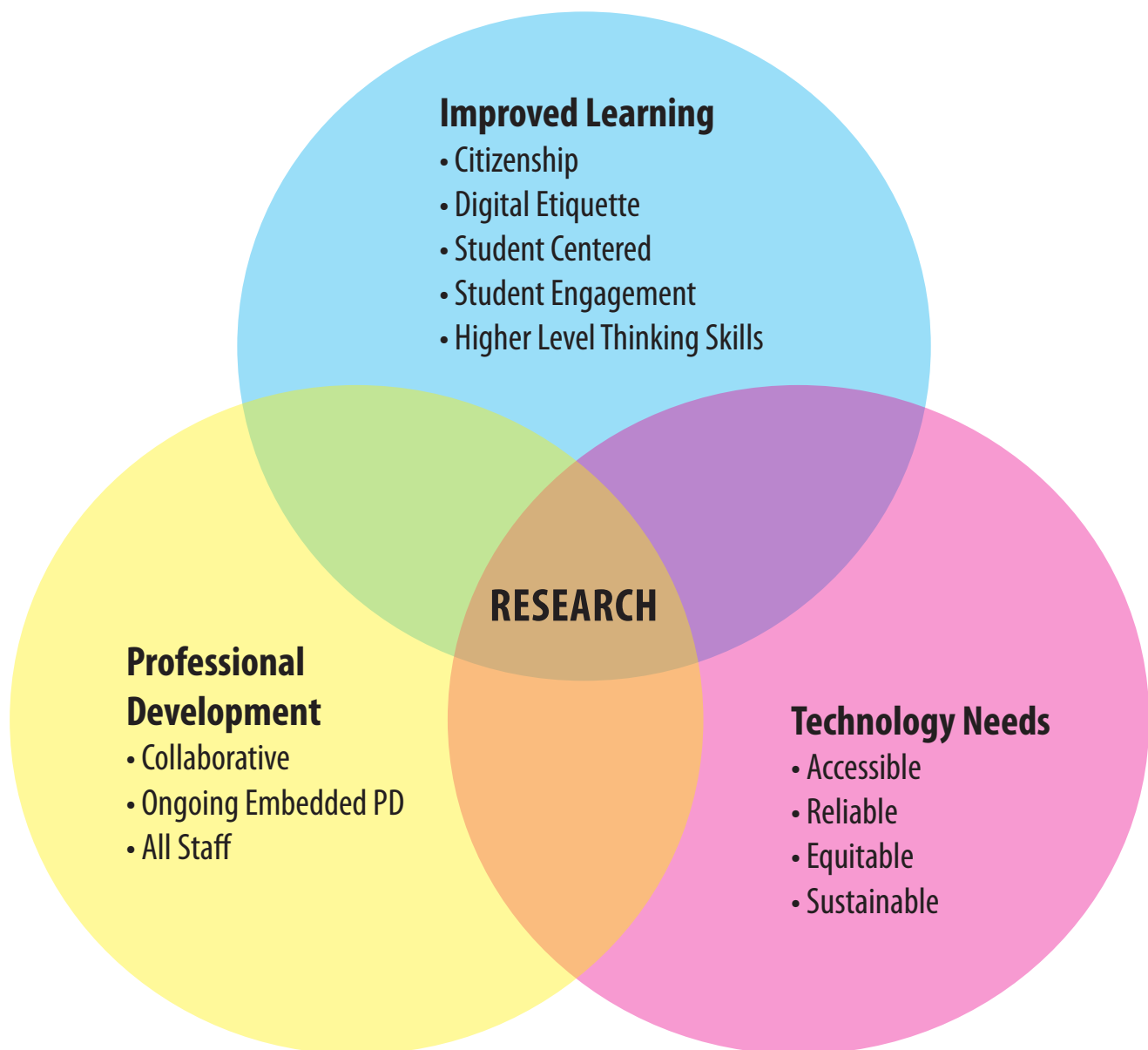


# Our Vision for Technology Use in Medicine Hat School District No. 76:

To create an environment that integrates technology as a natural part of the educational experience, and to create a sustainable and dynamic technological environment that allows the community of learners equal access to support improved learning.

The model provides an overview of the components of our vision and the core of our actions being researched.



## Technology Committee

The Medicine Hat School District No. 76 technology committee is an advisory group whose members represent a wide range of stakeholders (may expand our committee at some point). Its primary interest is the alignment of technology with the district long range plan; specifically the goal of delivering (input Vision). The long range plan for the district will include hardware, software and improved learning focuses.

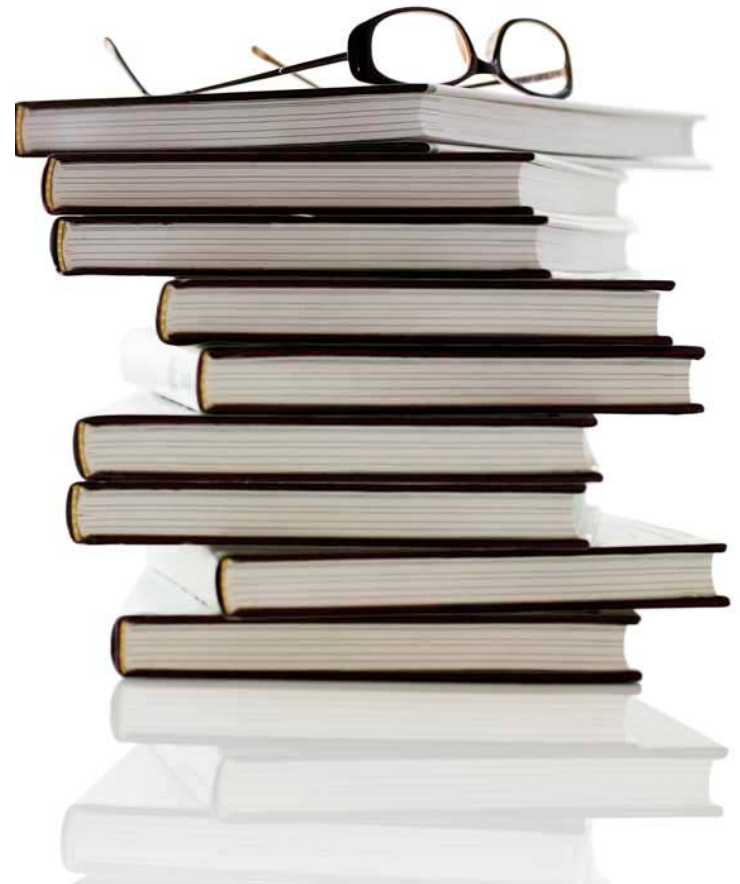
The aim of the committee is to:

- Provide input into the district's technology plan
- Provide ongoing recommendations on the plan revision as appropriate
- Monitor/advise on plan alignment with the district mission and provide recommendations for achieving the same
- Provide assistance with the implementation of plan goals when appropriate
- Provide advice on how the district can impart technology and Internet based offerings to the community and enhance district/community interaction
- Provide feedback from the areas that the committee members represent to the technology committee
- Provide advice and recommendations on how to effectively measure the impact that technology within the district has on its students learning
- Consider the impact of new technology on potential learning opportunities for students
- Gain an understanding of the district's technology plan and share this with members of the community
- Understand and share the research. Ensure that research is included as a basis for making sound instructional technology decisions
- Create the liaison and ongoing district professional development to support improved learning

**Deloitte.**

Medicine Hat School  
District  
IT Review

September 2009



# Medicine Hat School District (MHSD) have asked Deloitte to assist with reviewing and commenting on the current state of the IT within MHSD.

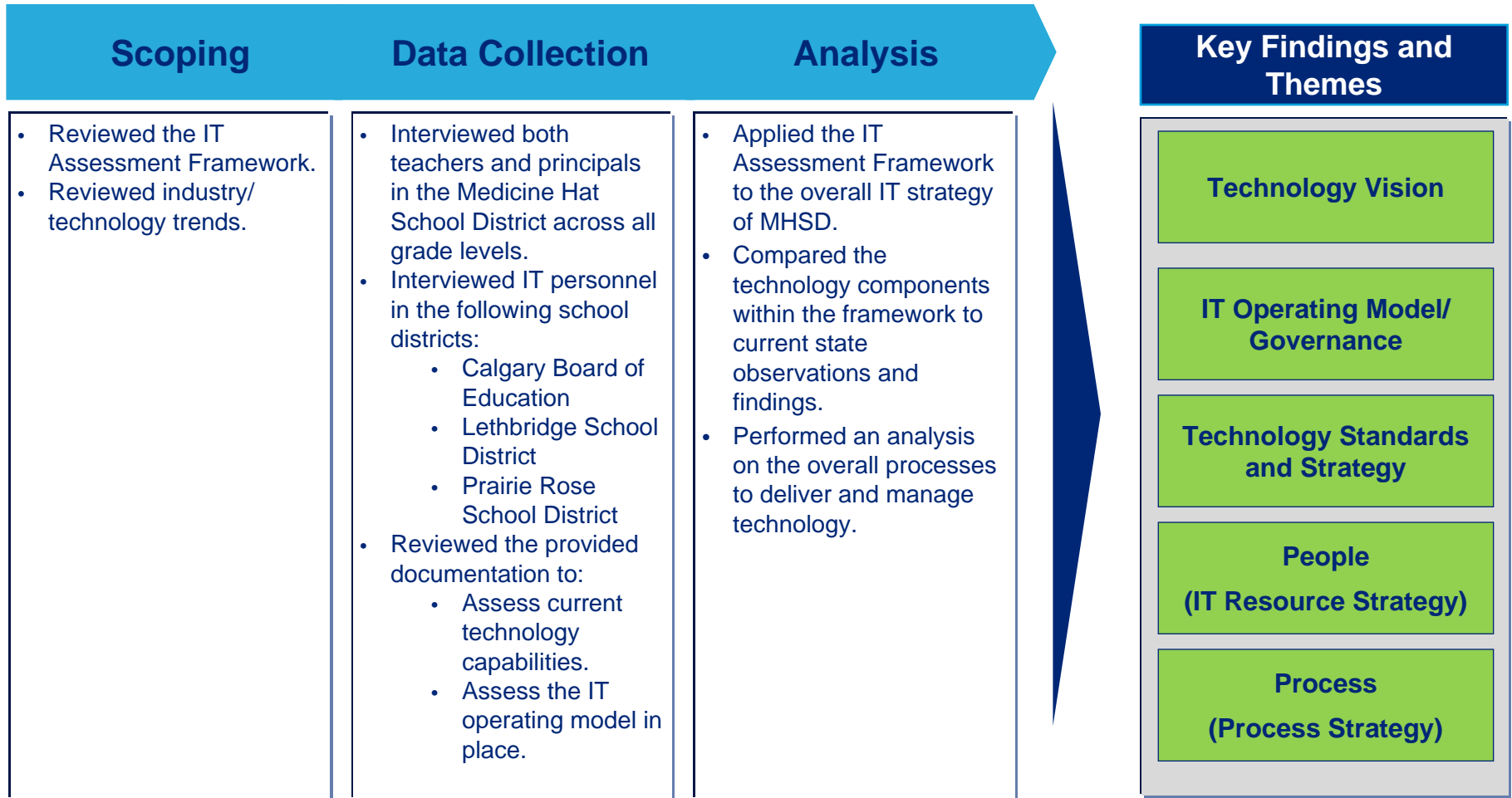
## Scope

Medicine Hat School District would like to carry out an assessment of their current IT systems and processes in order to better understand how IT is suited to meet current and future plans of the District and identify any areas for improvement or enhancement.

<p style="text-align: center;"><b>Technology Stability</b></p> <ol style="list-style-type: none"> <li>1. IT infrastructure that supports the business operations</li> <li>2. The high level logical and physical security setup supporting the business operations.</li> <li>3. IT systems support of the business, considering reliability and data integrity issues.</li> <li>4. IT hardware, software. Databases and key applications used considering capacity levels, analysis of key application metrics, performance and availability. Focus will be on whether systems can sustain current operations for one year.</li> <li>5. Business continuity and disaster recover procedures</li> <li>6. IT Operations process and issues which will cover incident and helpdesk related logs for internal/external users</li> <li>7. External interface feeds with external vendors</li> </ol>	<p style="text-align: center;"><b>IT Staff Support</b></p> <ol style="list-style-type: none"> <li>1. IT staff supporting the organization, consider the competencies of key IT employees and the formal/informal roles employees are assigned.</li> <li>2. Use of temporary IT staff, contractors and key employees currently on leave that affect IT functions and responsibilities.</li> </ol>	<p style="text-align: center;"><b>IT Operating and Capital Costs</b></p> <ol style="list-style-type: none"> <li>1. Current and prior year IT operating costs</li> <li>2. Current IT projects and or planned future IT capital expenditures</li> <li>3. IT environment of similar sized school districts in comparison</li> </ol>
	<p style="text-align: center;"><b>IT Vendor Support</b></p> <ol style="list-style-type: none"> <li>1. Key IT related software and hardware support and maintenances agreement.</li> <li>2. The district's use of third party suppliers and partners</li> </ol>	<p style="text-align: center;"><b>Software Licenses</b></p> <ol style="list-style-type: none"> <li>1. Purchased licensed software used and Medicine Hat School District's (MHSD) license management processes</li> </ol>

# A structured 3 phase approach was undertaken resulting in a set of key findings categories which is followed by a series of proposed recommendations.

- An IT assessment framework was used to analyze MHSD’s current state
  - The current state of IT was identified through a series of interviews through MHSD and a review of provided documents
  - The results were compared to industry practices and any gaps or areas of improvement were identified



# Findings

**Detailed findings from the assessment  
of MHSD's current IT management processes**

## A review of the current IT systems and processes resulted in the following findings.

Themes	Findings
<p><b>Technology Vision</b></p>	<ul style="list-style-type: none"> <li>• There is a lack of a formal IT strategy or vision for the District. Defining the current and future role of IT within the schools and District overall is generally focused on a short term, reactive approach.</li> <li>• There is a desire to increase focus on educator requirements within IT to assist in vision and strategy development and execution.</li> </ul>
<p><b>Current IT Operating Model/ Governance</b></p>	<ul style="list-style-type: none"> <li>• A lack of formalized service level requirements makes it difficult to validate delivery of current IT services , plan for future business requirements, and enable effective decision making .</li> <li>• The ownership of some IT tasks and decisions varies across the District as some schools address their requirements locally. Either due to funding differences between schools or the ability to address unique IT requirements .</li> <li>• There does not appear to be a clear and documented process for aligning requirements, creation of IT standards or process, or the process for enforcing any specific strategy.</li> <li>• There appears to be a lack of formalized and documented governance and/ or control process to manage and audit IT operations. Specifically, yearly IT audits should be considered in concert with financial audits.</li> </ul>
<p><b>Technology (Architecture Strategy)</b></p>	<ul style="list-style-type: none"> <li>• Current IT support was reported as being good and stakeholders advised they are happy with the level of support service provided.</li> <li>• The desire to minimize server hardware and utilize virtualization as consolidation is a positive approach.</li> <li>• Business continuity and disaster recovery have unknown impacts on operations without structured planning and testing.</li> </ul>
<p><b>People (IT Resource Strategy)</b></p>	<ul style="list-style-type: none"> <li>• Lack of formalized performance metrics and evaluation makes it difficult to determine IT resourcing accurately.</li> <li>• Current IT approaches appear to be covering very broad areas with Senior resources.</li> <li>• Senior District management’s role with IT is not formalized and should play a larger role.</li> </ul>
<p><b>Process (Process Strategy)</b></p>	<ul style="list-style-type: none"> <li>• It appears that manual or ad-hoc processes are the predominant approach to operations.</li> <li>• Sourcing and vendor management is occurring at the school level sometimes without visibility or involvement with IT.</li> </ul>

# Recommendations

# Based on the analysis of the current IT practices, we obtained the following recommendations.

Themes	Key Findings	Recommendation
<b>Technology Vision</b>	<b>Increase focus on educator &amp; corporate requirements within IT</b>	<ul style="list-style-type: none"> <li>Establish a senior level IT position responsible for the creation and alignment of strategic pedagogy and corporate goals with IT.</li> </ul>
<b>Current IT Operating Model/ Governance</b>	<b>Unclear service level requirements.</b>	<ul style="list-style-type: none"> <li>Define and establish minimum service level requirements for the delivery of IT to the District and schools.</li> <li>Communicate these requirements to all stakeholders and continuously evaluate and reference them throughout the IT management process.</li> <li>Develop formalized processes to escalate items as needed and develop appropriate incident and problem reports.</li> </ul>
	<b>Unclear definition of IT's roles, responsibilities and performance.</b>	<ul style="list-style-type: none"> <li>Appoint a person responsible for establishing and monitoring performance metrics for key tasks that the IT group is directly responsible for. Examples include vendor performance, customer satisfaction, IT Resource availability, and capacity.</li> <li>With formal metrics for IT responsibilities that are aligned with the overall District strategic plan, IT contributions to the overall successes of MHSD can clearly be articulated and supported.</li> </ul>
	<b>Environment relies on informal information sharing.</b>	<ul style="list-style-type: none"> <li>Establish a more collaborative communication flow between schools and IT. Establish an IT communication program that includes District and school IT updates, and general information on the direction and growth of IT.</li> <li>Include regular one-on-one meetings with direct school site representatives and IT that establishes a two way communication forum that allows for honest user feedback.</li> </ul>
	<b>Informal governance of IT operations.</b>	<ul style="list-style-type: none"> <li>Empower the IT Steering Committee to formally take on a larger governance role to ensure proper policies and processes within the IT department are in place.</li> </ul>

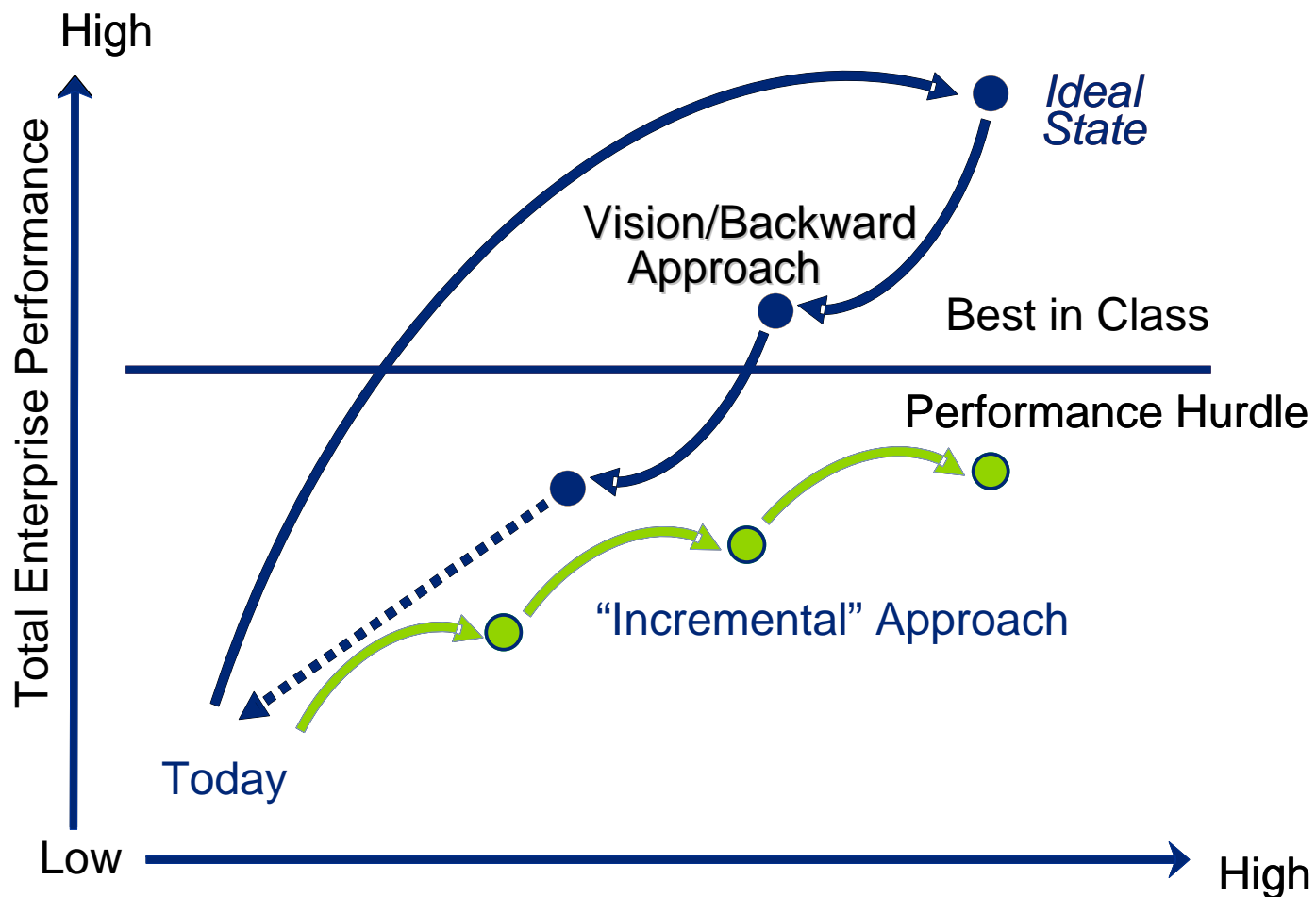
## Recommendations continued.

Themes	Key Findings	Recommendation
<b>Technology (Architecture Strategy)</b>	<b>Older and varied technologies exist.</b>	<ul style="list-style-type: none"> <li>• Establish a strategy for replacing hardware and applications, and obtaining the required skills to operate new technologies.</li> <li>• Minimize dependencies between applications where possible.</li> </ul>
<b>People (IT Resource Strategy)</b>	<b>Resource planning not in place.</b>	<ul style="list-style-type: none"> <li>• Keep a list of the current capabilities of the IT department as well as requirements for future roles and responsibilities of the group.</li> <li>• Based on the findings from the list of skills, a training strategy may be needed to fill gaps between the current and required skill set.</li> </ul>
	<b>Lack of clarity around accountability for tasks.</b>	<ul style="list-style-type: none"> <li>• Establish a tracking mechanism to record staff activities. Based on the information gathered, skills assessments, and career interests, assign resources to roles. Offer the training necessary for each resource to fulfill his/her detailed responsibilities for each role.</li> </ul>
	<b>Senior resources responsible for 1<sup>st</sup> level support for all non-core related systems.</b>	<ul style="list-style-type: none"> <li>• Ensure responsibility for first- and second-level support is addressed through the help desk.</li> <li>• Develop and execute a training strategy to fill gaps between the current and required skills.</li> </ul>
	<b>No business / educational focused role within IT.</b>	<ul style="list-style-type: none"> <li>• Executive management need individuals with good learning ability and engagement skills to partner with IT to act as a bridge between the requirements of these groups. Management must also be prepared to support these individuals through both business or technical training if required.</li> </ul>
	<b>Process (Process Strategy)</b>	<b>IT Planning , IT Delivery and IT Procurement not formally optimized.</b>

# Next Steps

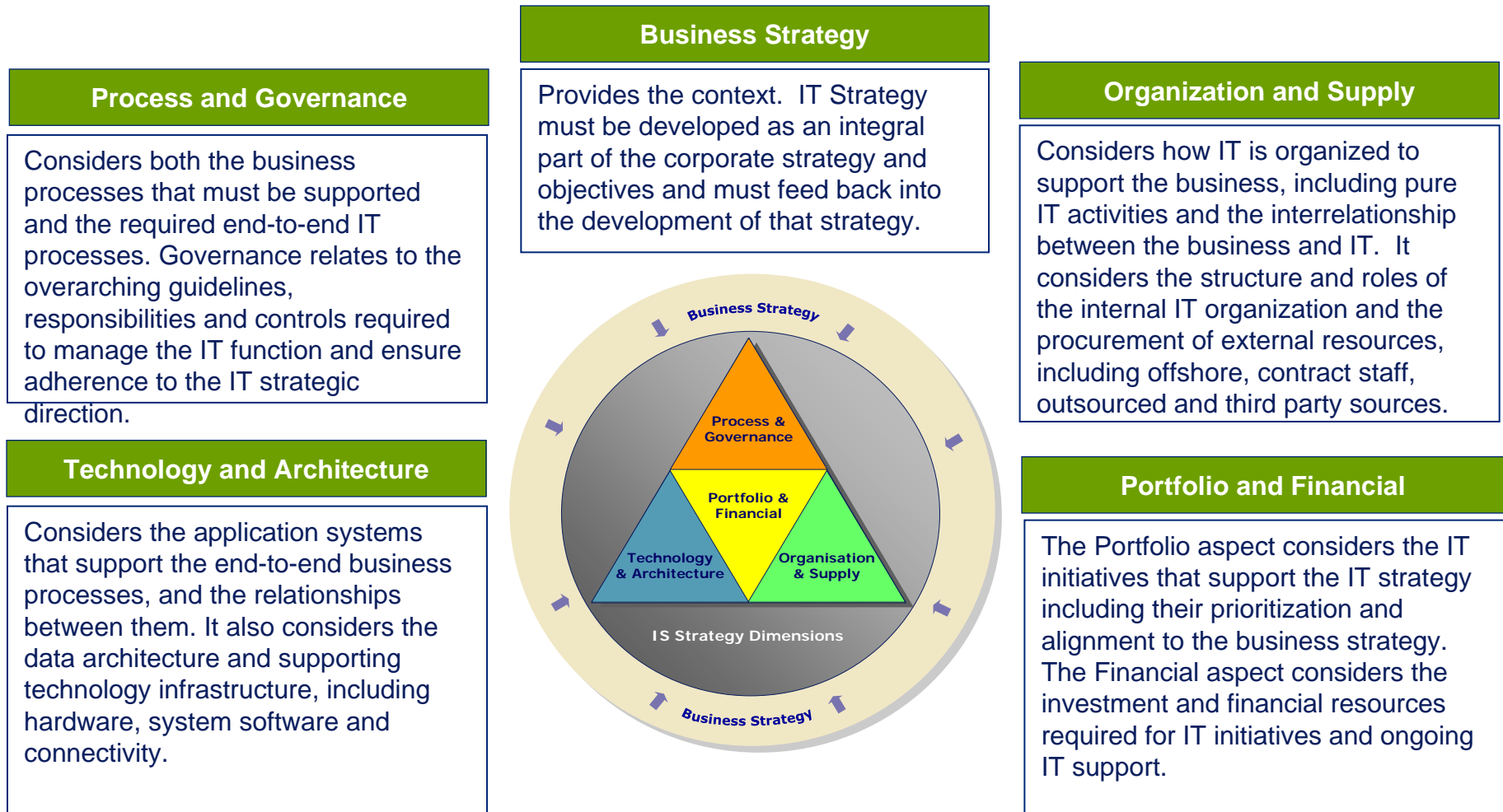
# An “ideal” Future Model is one that first defines the end goal (where we want to be) and then provides the details (transient stages) and associated roadmap on how to get there.

A Future State Model is a customer-centric, results-oriented roadmap that defines how to get to a whole new level of performance that enables strategic corporate goals by focusing on core competencies to drive significant improvement.

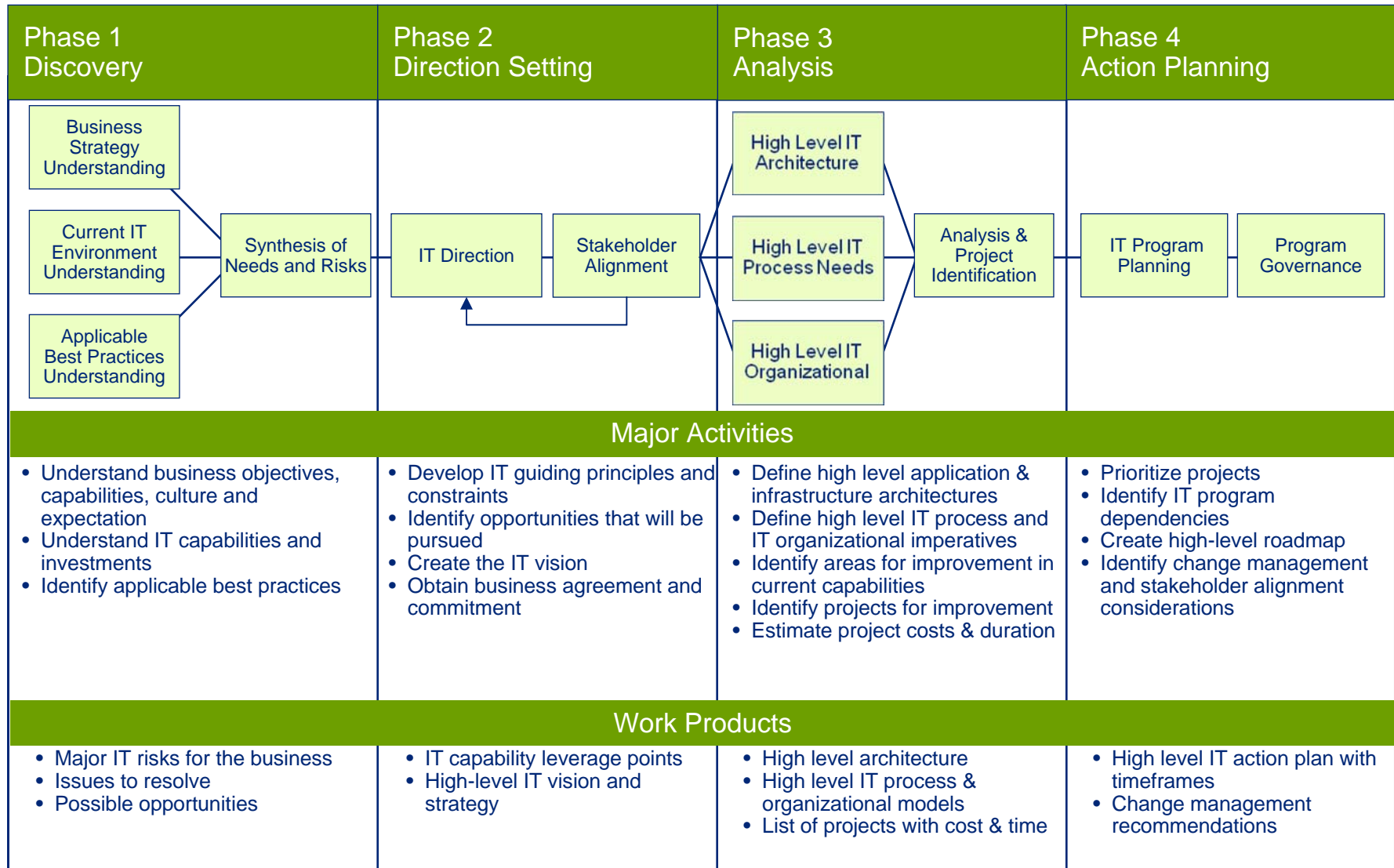


# An effective IT Strategy extends its focus beyond technology to include processes, people, organization and finances.

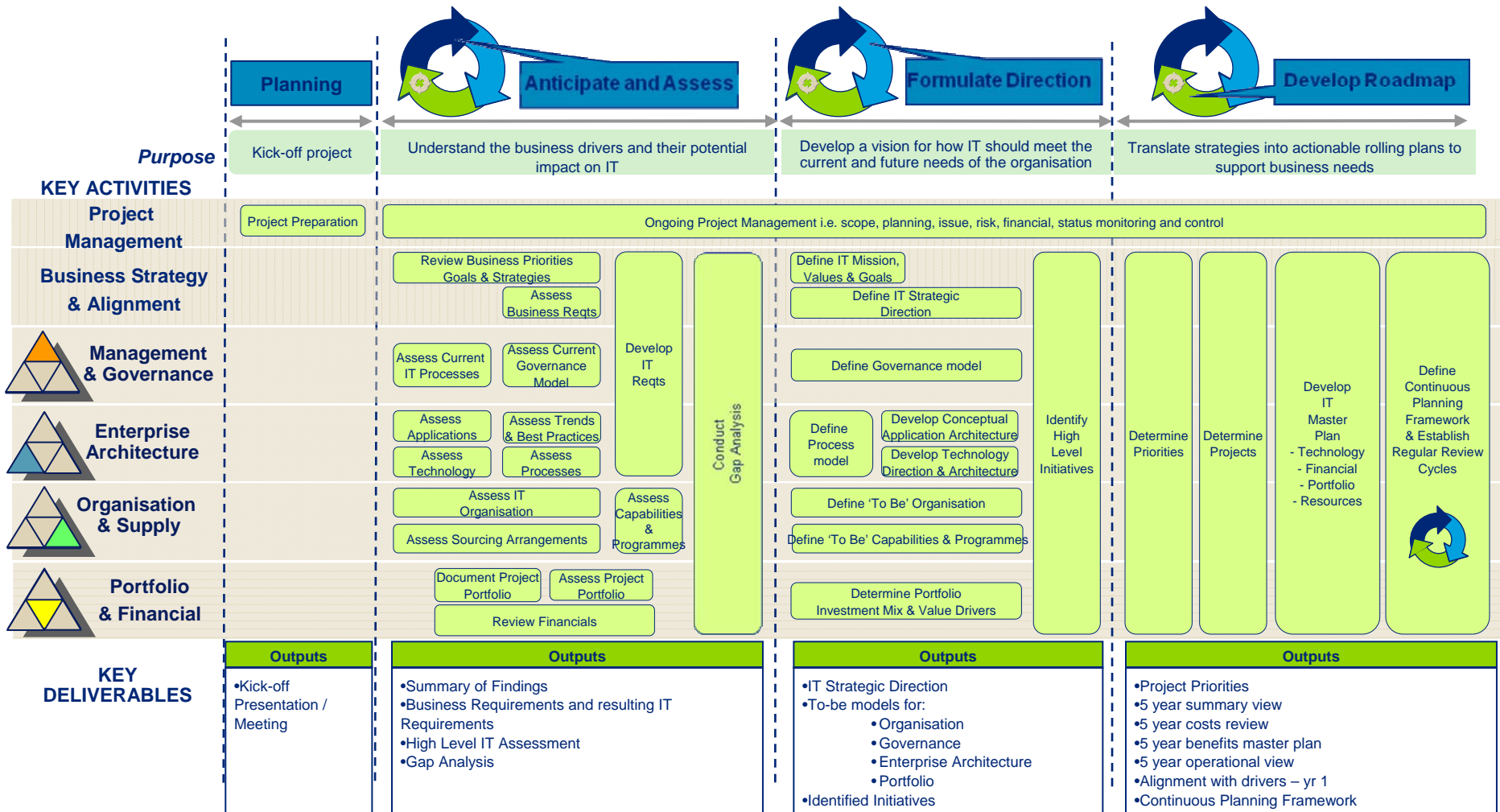
There are five key perspectives that are captured in an IT Strategy in order to insure that an organization's technology objectives are fully aligned with its objectives.



# The following is a typical example of a four phased approach to creating an IT Strategic Roadmap



# Developing an IT Strategy is a structured process that begins with an assessment of current resources and establishes a vision and execution plan for an enterprise architecture aligned with business objectives.



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# Appendix 1

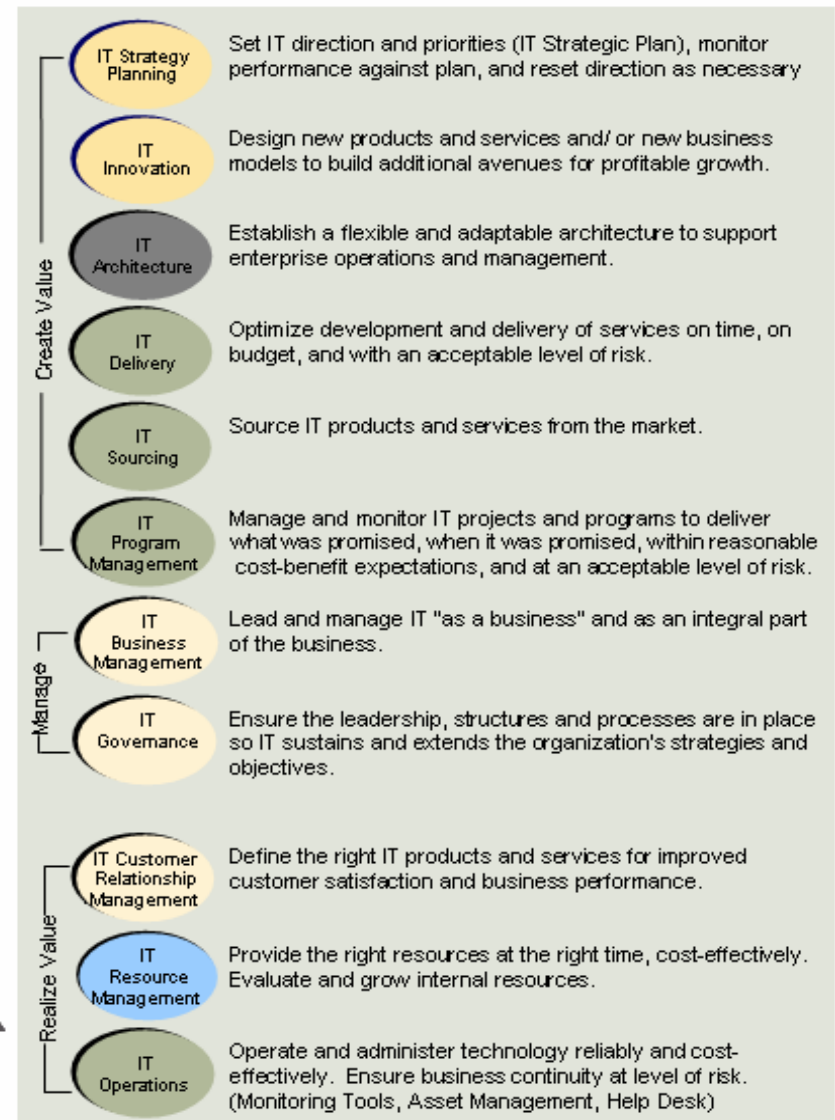
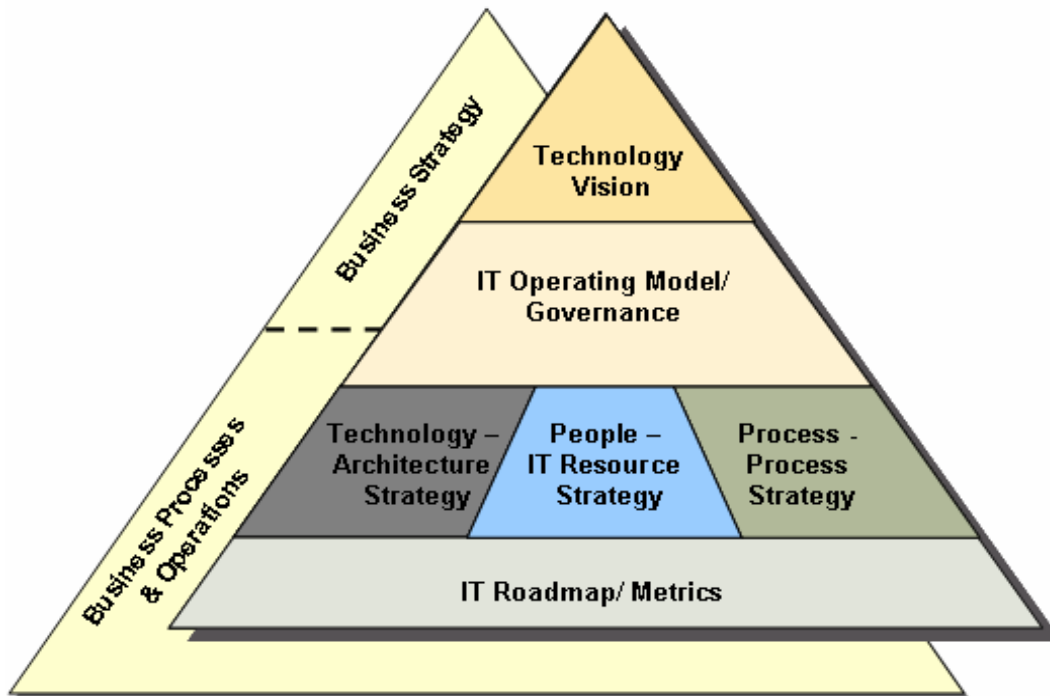
# Deloitte's CIO Management Framework Provides the Structure to Evaluate Medicine Hat School District's IT Department

The IT Framework formulates a discrete set of IT *Disciplines*.

These disciplines are integrated, both within IT and with other entities (such as business functions or groups) to produce results contributing to Technology Vision, IT Operating Model/ Governance, Technology, People and Process.

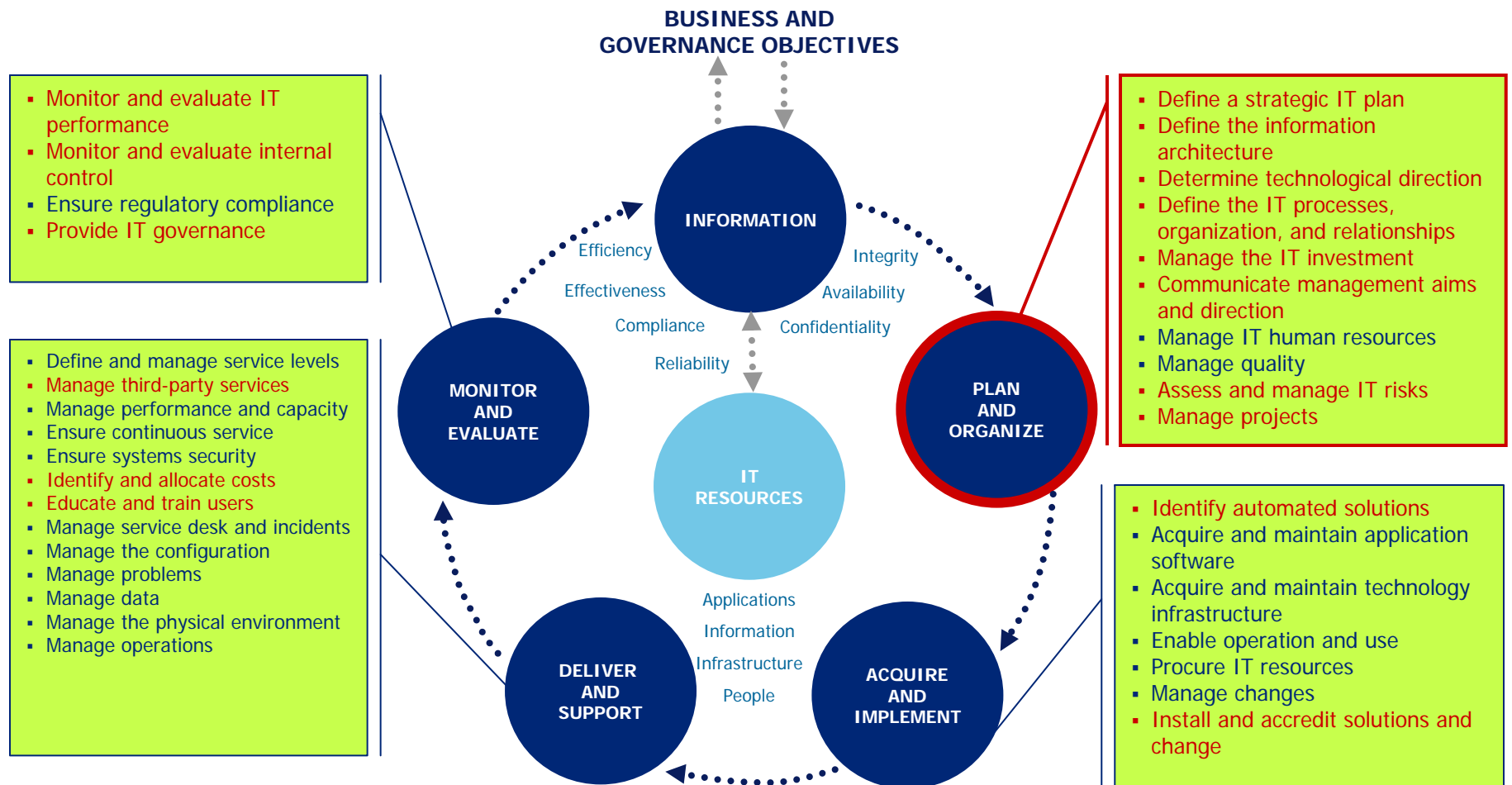
Disciplines are grouped by those that:

- ▶ Create Value
- ▶ Manage Value
- ▶ Realize Value



# Within each discipline in the CIO Framework, additional frameworks were used to assist in the IT Review.

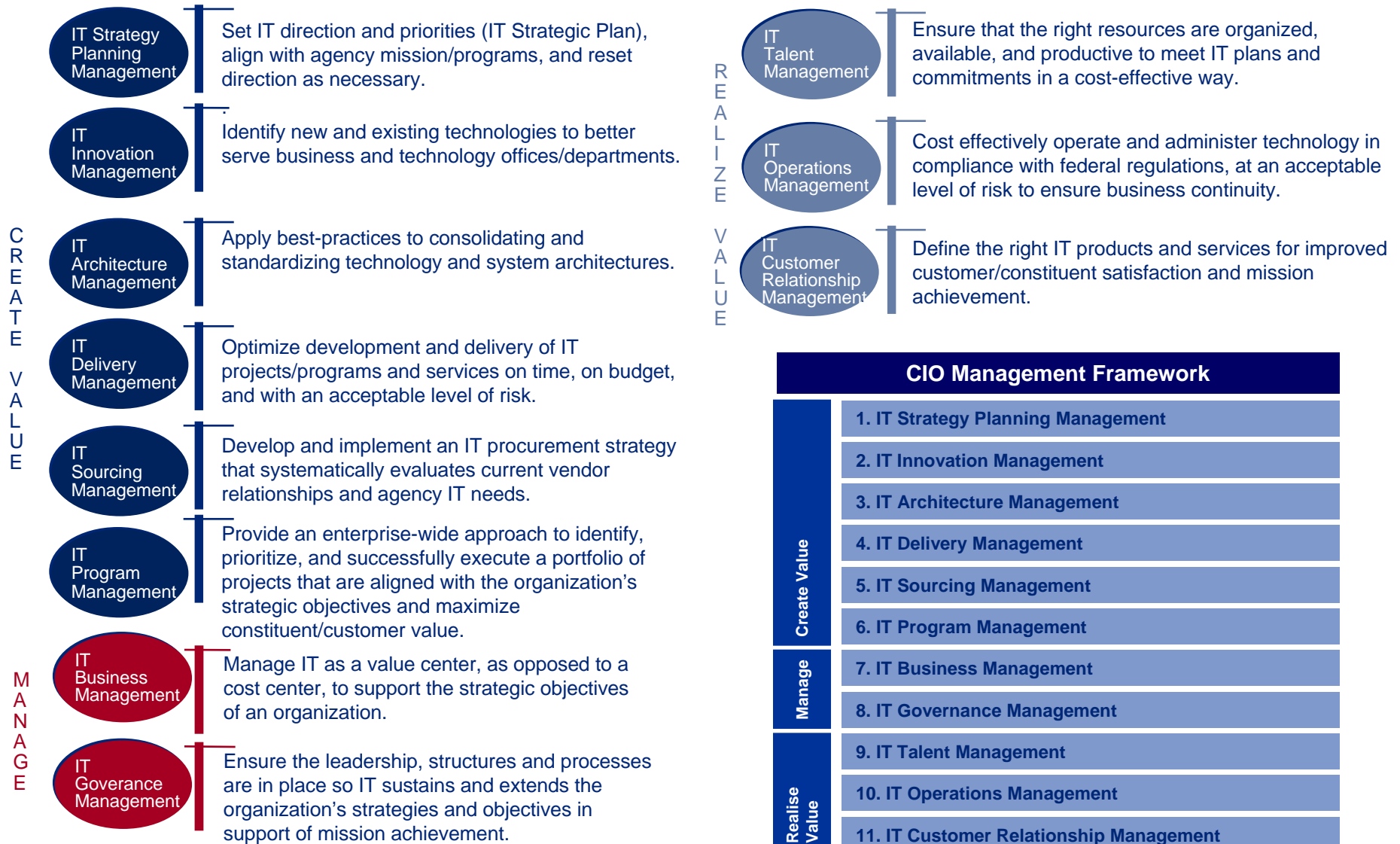
For the IT Strategic Planning and Operational Management disciplines in the CIO Framework, elements of the COBIT model were used to assess and identify process areas required to achieve strategic partnership alignment with the broader organization.



**\*\* Processes that are critical for IT-Organizational strategic partnership**

# The CIO Framework is used in assessing IT management processes and determines how well the IT organisation manages itself and the delivery of IT to the business

Disciplines and Perspectives point in the same direction: "Generate value through IT."



# COBIT defines high level Business Control Objectives for the broad process groups and supports these with detailed Control Objectives to provide management assurance and/or advice for improvement

- Control Objectives for Information technology (COBIT) has been developed as a generally applicable and acceptable standard for good information technology (IT) security and control practices that provide a reference framework for management, users, IS audit, control and security practitioners.
- It was first published by the Information Systems Audit and Control Foundation in 1996; COBIT is now in its third edition. The second edition added a practical implementation toolkit, this edition also marked a transfer to the IT Governance Institute and, with the addition of management guidelines, from the field of IT auditing into that of corporate governance. A comprehensive approach for managing risk and control of information technology is freely downloadable.
- **Structure of COBIT Framework**
  - COBIT framework comprises of 4 domains, 34 IT processes and 318 detailed control objectives. It addresses control objectives that related to operational and compliance issues.
  - COBIT defines IT processes across 4 broad domains
    - *Planning and Organization*
    - *Acquisition and Implementation*
    - *Delivery and Support*
    - *Monitoring*
- COBIT domains include control objectives, audit guidelines, tools and management guidelines. Within each domain the framework considers information criteria (confidentiality, integrity, availability & reliability) and IT Resources (people, applications, technology, facilities & data)

# COBIT and the CIO Framework.

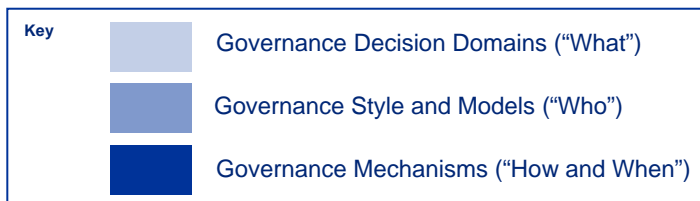
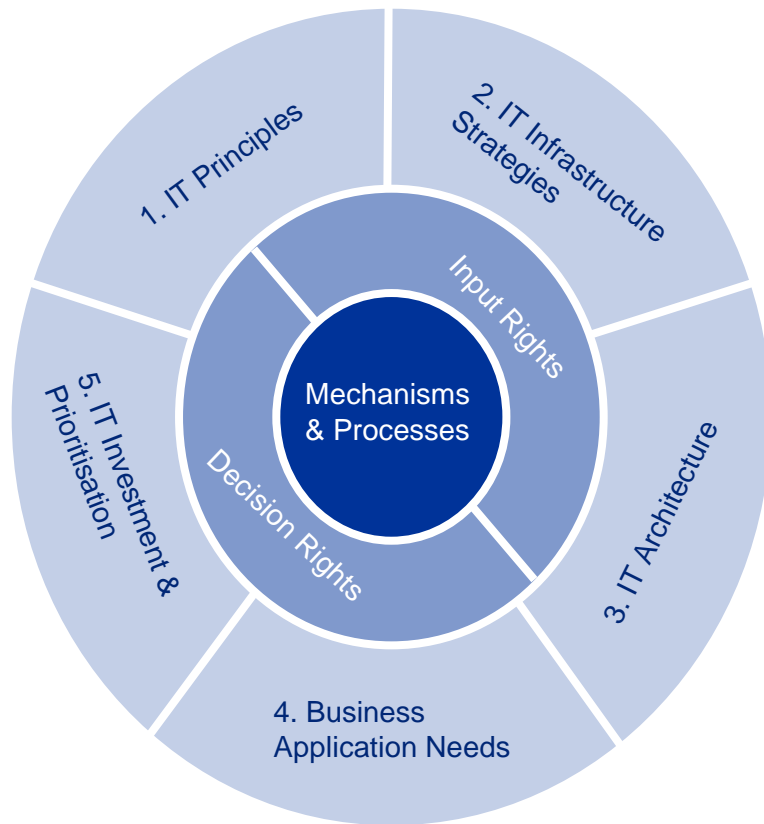
- Both the COBIT and the CIO Management framework were used to perform the As-Is assessment at MHSD, because they have specific focus on different areas i.e. operational vs. strategy. The CIO Management framework, therefore, added value to the As-Is assessment to gain an understanding of the strategic focus within IT initiatives.
- COBIT is largely accepted as good practice for control over information, IT and related risks.
- COBIT's management guidelines component contains a framework responding to management's need for control and measurability of IT by providing tools to assess and measure the enterprise's IT capability. ‘
- While the COBIT framework provides the necessary operational controls required, the CIO Management framework enhances the development of the strategic focus of IT, and can provide guidelines on developing structures, processes, roles and performance measures.
- It must be noted that the two frameworks - COBIT and CIO - are used for two different purposes. The CIO Management framework is strong on addressing the strategic element of IT, while the COBIT framework is strong on addressing the operational element.
- Therefore the decisions to use both the CIO and COBIT frameworks is based on the fact that the two complement each other.

# COBIT and the CIO Framework.

(Value) CIO Framework

(Risk) CobiT Processes	IT Strategy	IT Delivery Management	IT Innovation Management	IT Sourcing Management	IT Program Management	IT Architecture management	IT business Management	IT Governance Management	IT Talent Management	IT Operational Management	IT Customer Management
PO1 Define a Strategic IT Plan	*						*				
PO2 Define the Information Architecture						*					
PO3 Determine Technological Direction											
PO4 Define the IT Organisation and Relationships											
PO5 Manage the IT Investment							*	*			
PO6 Communicate Management Aims and Direction			*				*	*	*		*
PO7 Manage Human Resources									*		
PO8 Ensure Compliance with External Requirements								*			
PO9 Assess Risks								*			
PO10 Manage Projects		*			*			*			
PO11 Manage Quality											
AI1 Identify Automated Solutions		*									
AI2 Acquire and Maintain Application Software		*									
AI3 Acquire and Maintain Technology Infrastructure		*									
AI4 Develop and Maintain Procedures		*									
AI5 Install and Accredite Systems		*									
AI6 Manage Changes		*					*				
DS1 Define and Manage Service Levels		*								*	*
DS2 Manage Third-Party Services				*							
DS3 Manage Performance and Capacity										*	
DS4 Ensure Continuous Service										*	
DS5 Ensure Systems Security										*	
DS6 Identify and Allocate Costs											
DS7 Educate and Train Users											*
DS8 Assist and Advise Customers										*	
DS9 Manage the Configuration											
DS10 Manage Problems and Incidents										*	
DS11 Manage Data											
DS12 Manage Facilities											
DS13 Manage Operations										*	
M1 Monitor the Processes								*			*
M2 Assess Internal Control Adequacy								*			
M3 Obtain Independent Assurance								*			
M4 Provide for Independent Audit								*			

# For the IT Governance and IT Architecture disciplines within the CIO Framework, key components from best practices and industry frameworks assisted in the IT Review.



Source: Effective IT Governance By Design, Gartner, 2003

Organization exhibiting effective IT governance address five domains:

1. **IT Principles** – Key principles or statements of intent as to how IT will be used to create business value.
2. **IT Infrastructure Strategies** – Strategies for the base foundation of budgeted-for IT capability, shared throughout the firm as reliable services, and centrally coordinated.
3. **IT Architecture** – Integrated set of technical choices to guide the organisation in satisfying business needs, including policies and standards that govern the use of IT and plot a migration path to the way business will be done (inc. data, technology and applications).
4. **Business Application Needs** – Decisions regarding what business applications are needed to support the business.
5. **IT Investment & Prioritisation** – Decisions regarding how much and where to invest in IT, including project approval and justification techniques.

These decision domains identify **what** strategic decisions have a significant bearing on ensuring IT aligns with, and enables the business to achieve its goals.

Governance styles and models define **who** is involved in making decisions across the domains, including having input to and making the final decision.

Governance mechanisms describe **how and when** decisions are made (e.g. committees, councils etc).

# For the IT Resource Management discipline within the CIO Framework, 6 key components in an organizational framework were examined.

