Managing and Using Information Systems: A Strategic Approach

Seventh Edition

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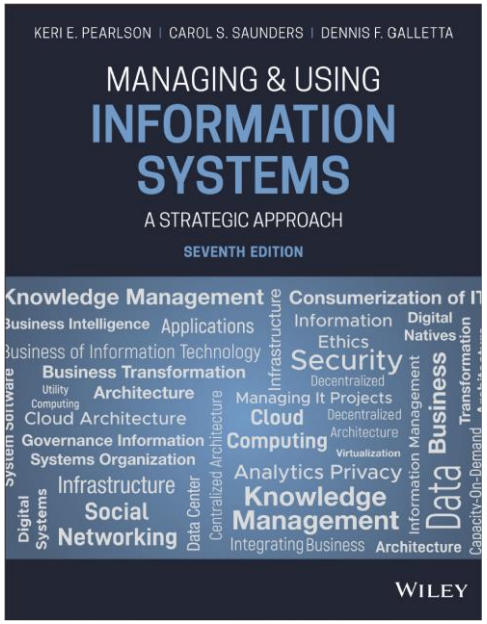
Chapter 8

The Business of Information Technology



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Chapter 8

The Business of IT

We chose you because you were the best of the IT group, and you are doing a great job completing IT projects and managing the IT organization. But I am afraid that you don't know the business of your business. You haven't thoroughly answered my repeated questions about how much IT costs the business! Furthermore, you can't communicate with the people running the business in words they understand!

"If it wasn't a hard problem, I wouldn't need you here!"

Horner reported that he began to realize that this audience did not want to hear about the technology. "They certainly wanted me to handle technology issues, but they wanted me to communicate with them **in words they understood** . . . **people, time, money** and the possibilities technology created for them in their businesses. Most importantly they wanted me to help them to use IT to **grow the business** at either the top line (sales) or bottom line (net income)."

How he achieved the success?

Partner with the CFO to understand the financials of the business

Within 60 days, the president and his management team had their answers

He found it most helpful to use the Hackett Group, an external benchmarking consulting firm, to compare his costs against those of similar firms. This analysis was most helpful for the leadership of the business because after finding that the company was high on some key IT costs, the leaders all saw the writing on the wall for the next mission: **Find ways to reduce costs but continue to provide improved services**

He accompanied salespeople on **actual sales calls** to see exactly how the overall supply chain process worked. Then with that information as a base, he was able to have the business provide reliable product information to customers, accelerating **delivery of the products customers needed without creating excessive inventory buffers**

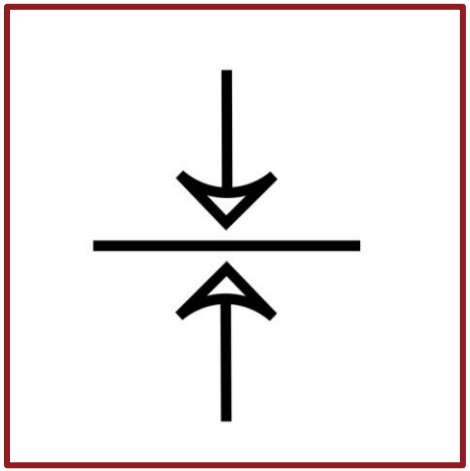
standardization, which enabled further savings by simplifying items such as interconnectivity between segments of the business and PC and mobile phone support.

The Horner/Alcoa Story

- High-performing tech worker—almost dismissed as CIO
- What were the issues?
  - What did they expect from him?
  - What did he deliver at first?
  - What change did he make to become more valuable to Alcoa?

The Alcoa lesson: Business Demands

- IT offerings need to be **aligned** with business demands
- IT complexities should be **translated** to business needs



IT Maturity Model

Merlyn's Business-IT Maturity Model

Maturity Levels	Nature of the Levels	Engagement Characteristics
Level 3: Business transformation	IT as business partner	• Proactive • Outside-in • Relationship centric • Focused on business growth • Framed on a context of business value
Level 2: Business effectiveness	IT as solutions provider	• Active • Process centric • Focused on solutions • Framed in a context of projects
Level 1: Business efficiency	IT as order taker	• Reactive • Inside-out • Technology centric • Framed in a context of cost

FIGURE 8.1 Business-IT maturity model.

Source: Adapted from Vaughan Merlyn, http://themerlyngroup.com/2014/04/01/the-disciplines-of-business-it-engagement/ (accessed March 11, 2019) and http://themerlyngroup.com/2008/02/04/re-thinking-business-it-maturity/ (accessed March 11, 2019).

IT as a ship….

What a Manager Can Expect From the IT Organization [1]

A manager typically can expect some level of support in **14 core activities** (Figure 8.2) – levels in parentheses

1. Developing and maintaining IS (1)
2. Managing supplier relationships (1)
3. Managing data, information, and knowledge (1, 2)
4. Managing Internet and network services (1, 2)
5. Managing human resources (1)
6. Operating the data center (1)
7. Providing general support (1)

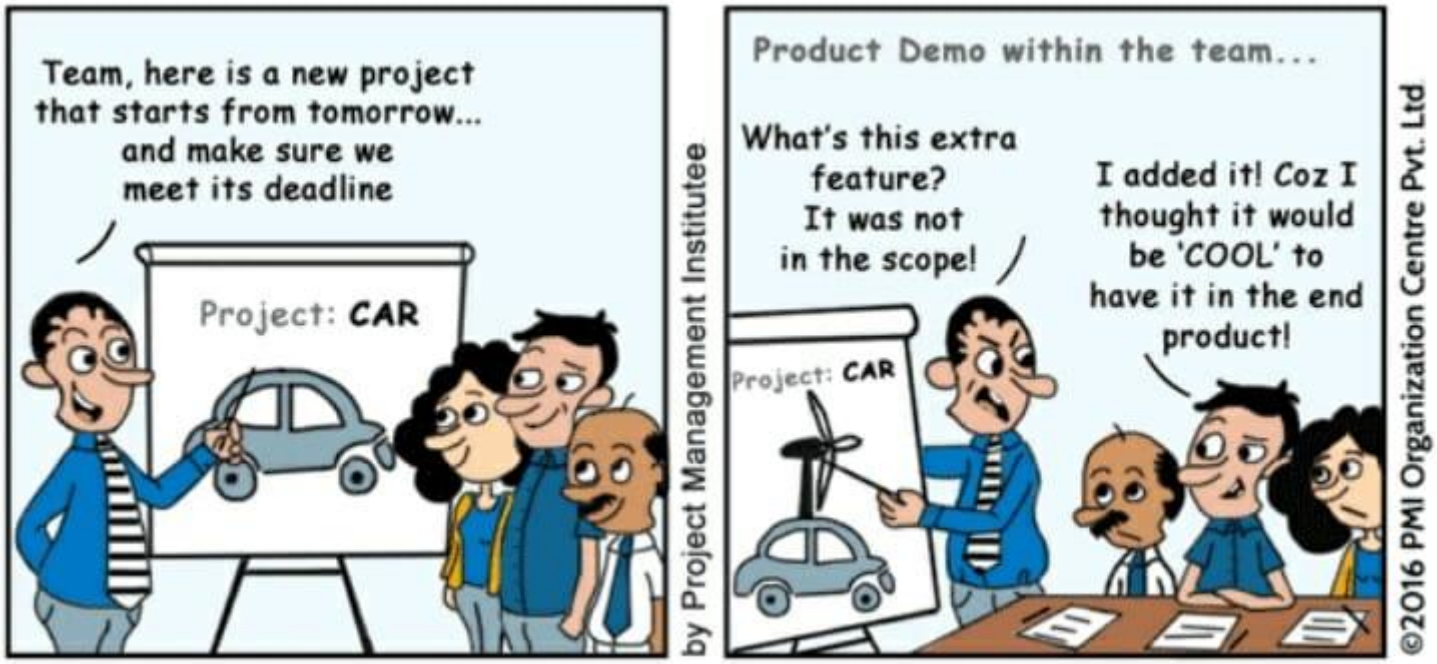
What a Manager Can Expect From the IT Organization 2

8. Planning for business discontinuities (1)
9. Innovating current processes (2)
10. Establishing architecture platforms and standards. (2)
11. Promoting enterprise security (2)
12. Anticipating new technologies (3)
13. Participating in setting and implementing strategic goals (3)
14. Integrating social IT (3)

What The IT Organization Does Not Do

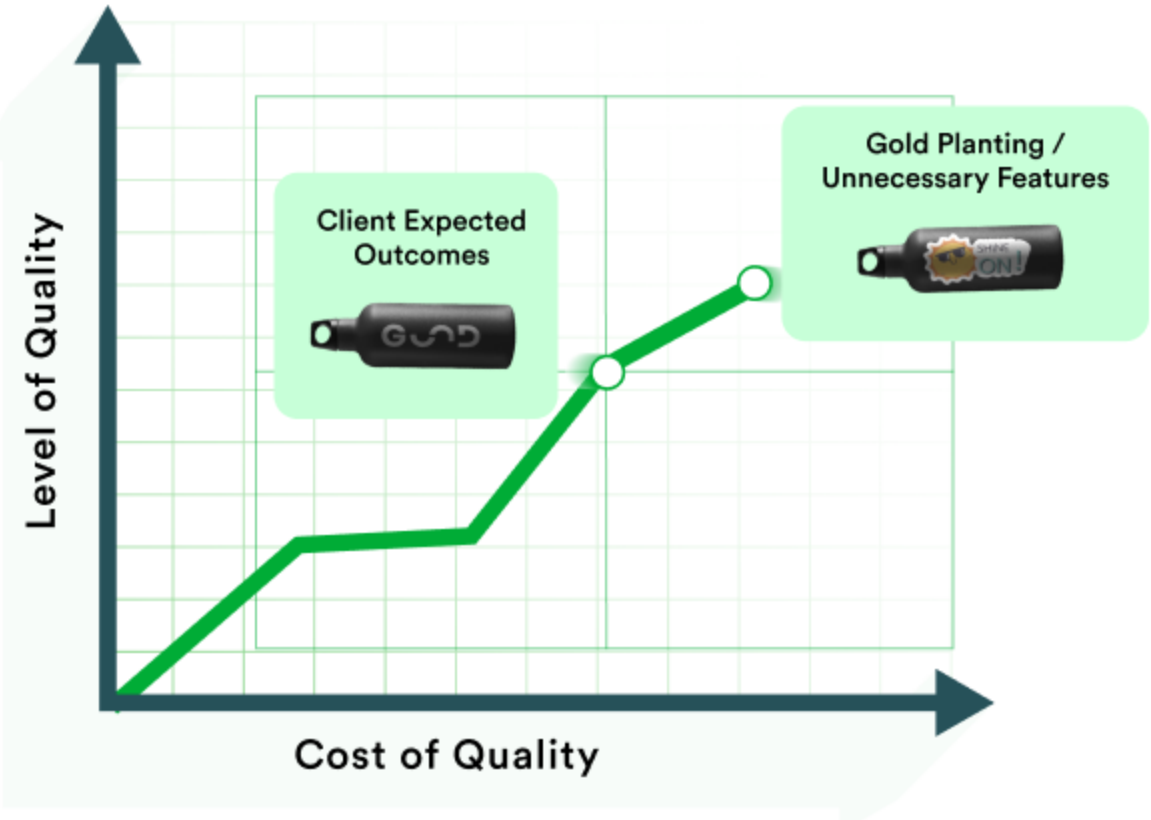
- Does not perform core business functions such as:
  - Selling
  - Manufacturing
  - Accounting.
- Does not set business strategy.
  - General managers must not delegate critical technology decisions.
    - which business projects receive IT dollar
    - prioritizing IT projects
    - decide the acceptable level of IT services or security.

Gold-plated Project



Gold Plating in Project Management:

Definition and Prevention



Chief Information Officer (CIO) The Senior-Most IT Executive

- Responsible for technology vision
- Leads design, development, implementation, and management of IT initiatives
- Is a business technology strategist or strategic business leader
- Uses technology as the core tool in
  - creating competitive advantage
  - aligning business and IT strategies

CIO's Focus

- CIO's focus has shifted:
  - From efficiency to effectiveness in a constantly changing/competitive marketplace
  - Formerly: reported to the CFO. Now: reports to the CEO.
  - Shift over time towards helping executive team formulate business strategy

CTO, CPO, and Other Roles

- CIO Can't have **all** skills—can't know everything!
- Other roles are important:
  - CTO: Chief Technology Officer (tracks technologies)
  - CKO: Chief Knowledge Officer
  - CDO: Chief Data Officer
  - CAO: Chief Analytics Officer
  - CTO: Chief Telecommunications Officer
  - CNO: Chief Network Officer
  - CRO: Chief Resource Officer
  - CISO: Chief Information Security Officer
  - CPO: Chief Privacy Officer
  - CMO: Chief Mobility Officer
  - CSMO: Chief Social Media Officer

So Who Should Make the Decisions?

- Ross & Weill say
  - The CEO should not make those decisions alone
  - C-level executives should not even make those decisions
  - Input is needed from **both** IT and the business units alike
  - Steering (or Executive) Committee solution

Building a Business Case – Components 1

- Executive Summary
- Overview and Introduction
- Assumptions and Rationale
- Project Summary
- Financial Discussion and Analysis
- Benefits and Business Impacts
- Schedule and Milestones
- Risk and Contingency Analysis
- Conclusion and Recommendation
- Appendices

Building a Business Case – Components 2

Benefits	Innovation: Chat Function and Customer Support Forum	Improvement: Remodeled Facebook Page	Cessation: Reduce Phone Support Needs by 90%
Financial	Fewer returns; higher sales	Sales from redemption of special coupons by new customers	Overall costs reduced
Quantifiable	Shorter customer wait time	Number of new customers	Wait time for phone lines
Measurable	Higher customer satisfaction scores	Number of “shares” by new customers	Overall customer service satisfaction scores
Observable	Fewer complaints	Supportive comments on the page	Decrease in verbal complaints by phone-in customers

FIGURE 8.6 Benefit examples for a business case.

Building a Business Case – Components 3

Sample of benefits in a business case for adding chat function linked from Facebook page

		Type of Business Change		
		Innovation (Do new things)	Improvement (Do things better)	Cessation (Stop doing things)
High ↑ degree of explicitness ↓ Low	Financial Benefits	Sales improved by $250k; costs decreased by $50k after change		
	Quantifiable Benefits	Converted 150 calls per day to chats; reaching 200 more customers per day		
	Measurable Benefits	Facebook page likes; number of chats; Customer satisfaction scores moved from 3.3 to 4.1 (out of 5)		
	Observable Benefits	Busy chat operators; busy Facebook page; Customers seem happier		

IT Portfolio Management

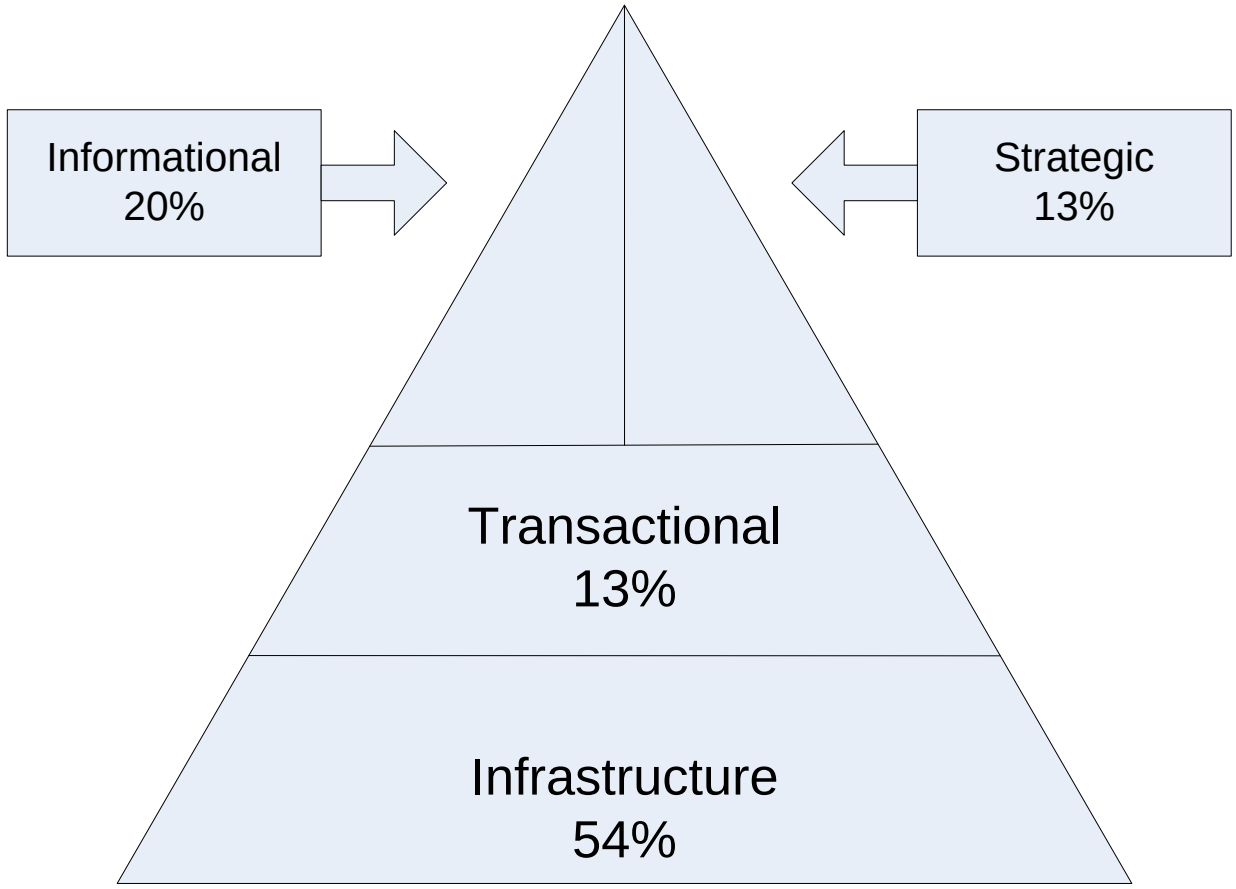
- IT investments should be managed as any other investment.
- Evaluate and approve IT investments as they relate to other potential investments of all kinds
- Goals:
  - Pick the right mix of investments
  - Invest in the most valuable IT initiatives

IT Asset Classes

- Weill and Aral say that there are four asset classes of IT investments:
  - **Transactional systems** – systems that streamline or cut costs on business operations.(equivalent to Level 1 Maturity Model)
  - **Informational systems** – any system that provides information used to control, manage, communicate, analyze or collaborate. .(equivalent to Level 2 Maturity Model)
  - **Infrastructure systems** – the base foundation or shared IT services used for multiple applications. .(equivalent to Level 2 Maturity Model)
  - **Strategic systems** – any system used to gain competitive advantage in the marketplace. .(equivalent to Level 3 Maturity Model)

Average company's IT portfolio profile

(See Discussion Question 4)



Comparative IT portfolios for different business strategies

(See discussion question 4)

	Transactional investments	Infrastructure investments	Informational investments	Strategic investments
Average firm	25%	46%	18%	11%
Cost focus	**27%**	**44%**	18%	11%
Agility focus	**24%**	**51%**	15%	10%

Valuing IT Investments

- Soft benefits, such as the ability to make future decisions, make it difficult to measure the payback of IT investment
  - IT is expensive, thus under close scrutiny.
  - IT is complex; calculating the costs is an art, not a science.
  - Payback period for infrastructure is much longer than other types of capital investments.
  - With necessary systems (due to laws, etc.), the payback period cannot be calculated
- Many valuation methods are available…

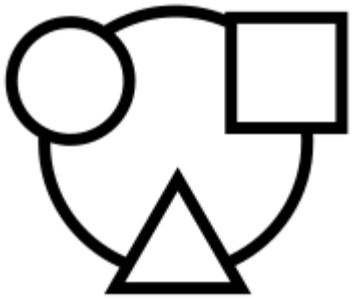
Financial Valuation Methods

Valuation Method	Description
Return on Investment (ROI)	$\text{ROI} = \frac{\text{Revenue} - \text{Investment}}{\text{Investment}}$
Net Present Value (NPV)	Discount the costs and benefits for each year of the system's lifetime using present value factor $\frac{1}{(1+\text{Discount rate})^{\text{years}}}$
Payback Analysis	Time that will lapse before accrued benefits overtake accrued and continuing costs
Internal Rate of Return (IRR)	Return of the IT investment compared to the corporate policy on rate of return
Weighted Scoring Methods	Costs and revenues/savings are weighted based on their strategic importance, accuracy/confidence, other opportunities

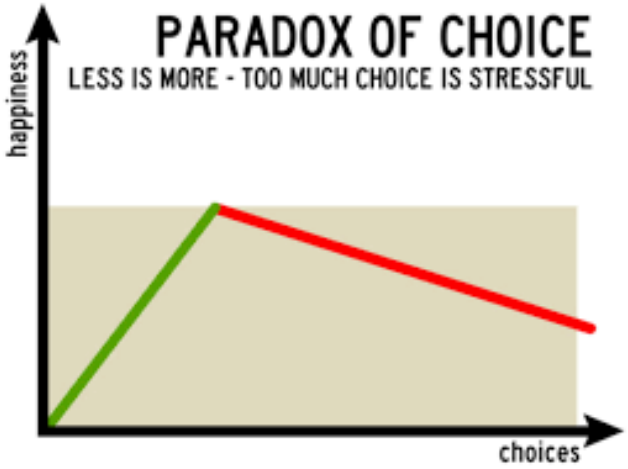
Pitfalls

Necessary but not worthwhile

Heavy in soft benefits



Diversity and fixed budget



IT Investment Monitoring

- Old saying: “If you can’t measure it, you can’t manage it”
- Management needs to achieve organizational benefits from IT investments
- Must agree upon a set of metrics for monitoring IT investments.
- Often financial in nature (ROI, NPV, etc.).

Communicating measures

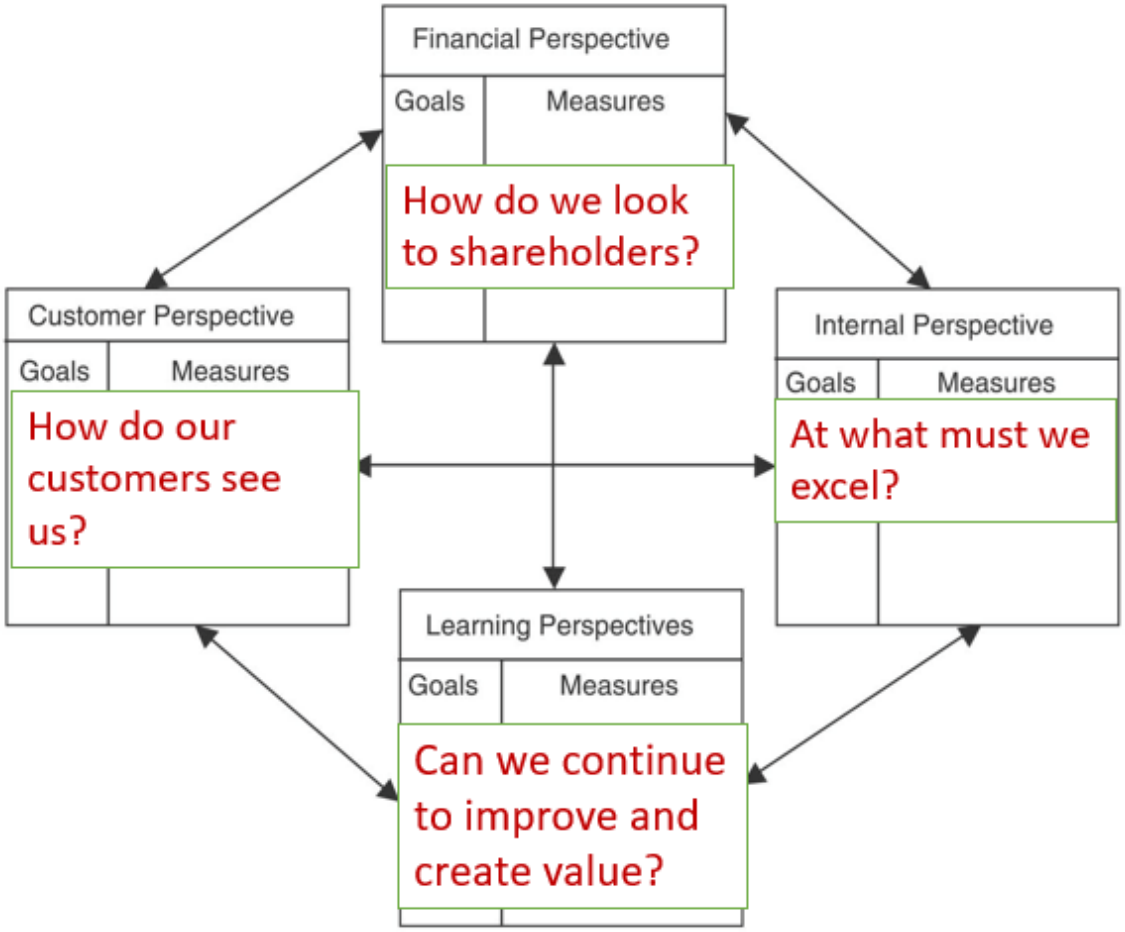
Deciding on appropriate measures is half of the equation for effective IT organizations. The other half of the equation is ensuring that those measures are accurately communicated to the business.

Two methods for communicating these metrics are scorecards and dashboards

The Balanced Scorecard

- Focuses attention on the organization's value drivers (which include financial performance).
- Assesses the full impact of corporate strategies on customers and workforce, as well as financial performance.
- Allows managers to look at a business from four related perspectives:

The Four Balanced Scorecard perspectives



The IT Balanced Scorecard

- Using it within the MIS department helps senior IS managers
  - Understand their organization's performance
  - Measure it in a way that supports its business strategy
- Linked to the corporate scorecard
  - By ensuring that the measures used by IT are those that support the corporate goals.

RESTAURANT BALANCED SCORECARD EXAMPLE

— BOB'S PIZZA & PASTA —

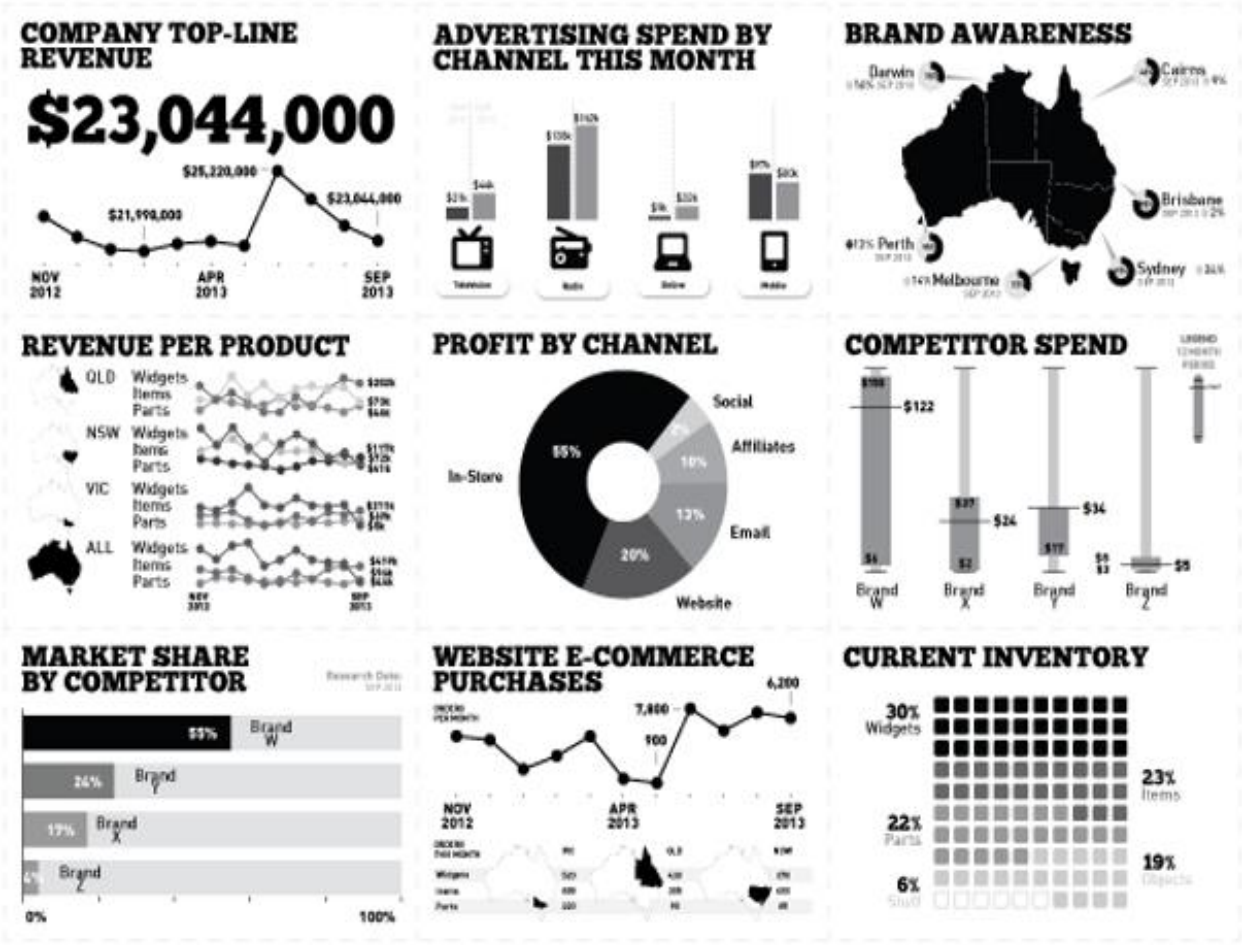
ADDRESS	1234 Mozzarella Way SE	CITY	Seattle	STATE	WA	ZIP	98106

	STRATEGIC OBJECTIVES	KEY PERFORMANCE INDICATORS	TARGETS			INITIATIVES	
			CURRENT	INTERVAL	NEXT	PROGRAMS	BUDGETS
FINANCIAL	Increase company profitability	% Net profit margin	7%	Q	12%	N/A	N/A
		$ Net cash flow	22,101	M	24		
	Optimize revenue and expenses	$ Sales to Date	30,564	Q	35,05		
		$ Cost per call	0.24	M	0.12		
CUSTOMER	Maintain high levels of customer satisfaction	% Survey excellent score	32%	Q	50%	Begin customer rewards project: Project to train employees on new customer rewards.	$5,000.00 initiative; 0.5 hour per employee
		% Call abandon rate	16%	M	10%		
	Increase customer profitability	$ Revenue per client	300	M	350		
		$ Average new customer acquisition cost	12	M	5		
	Build and improve the customer network	# New customers	315	M	350		
		% Market share	6%	Q	10%		
INTERNAL PROCESSES	Increase call handling expertise	Average call handling time	315	M	350	Training for call handlers; Review the service delivery process.	0.25 hour per call handler; 5.0 hours manager
		% Scheduling adherence	6%	Q	10%		
	Improve service delivery	% Processes optimized	9	M	7		
		% Active projects running on-time	75%	M	85%		
		and on-budget	50%	M	55%		
			50%	M	50%		
LEARNING	Build a culture that encourages innovation	# Employee engagement index	27	Q	40	Ask for and reward employee ideas that improve processes. Write up employee innovations in the company newsletter. Determine bonus structure for successive years of service. Group to decide rewards for completed training programs.	$25/idea, $500/success idea; Groups: 5 hours manager; 1 hour manager
		# Ideas received for new/improved service from employees	25	M	25		
	Nurture high performing employees	% Employee satisfaction	75%	Q	85%		
		% Employee turnover	9%	M	5%		
	Continuously improve skills and competence	# Training hours per full-time equivalent	15	M	18		
		% Employees meeting professional development requirements	72%	Q	85%		

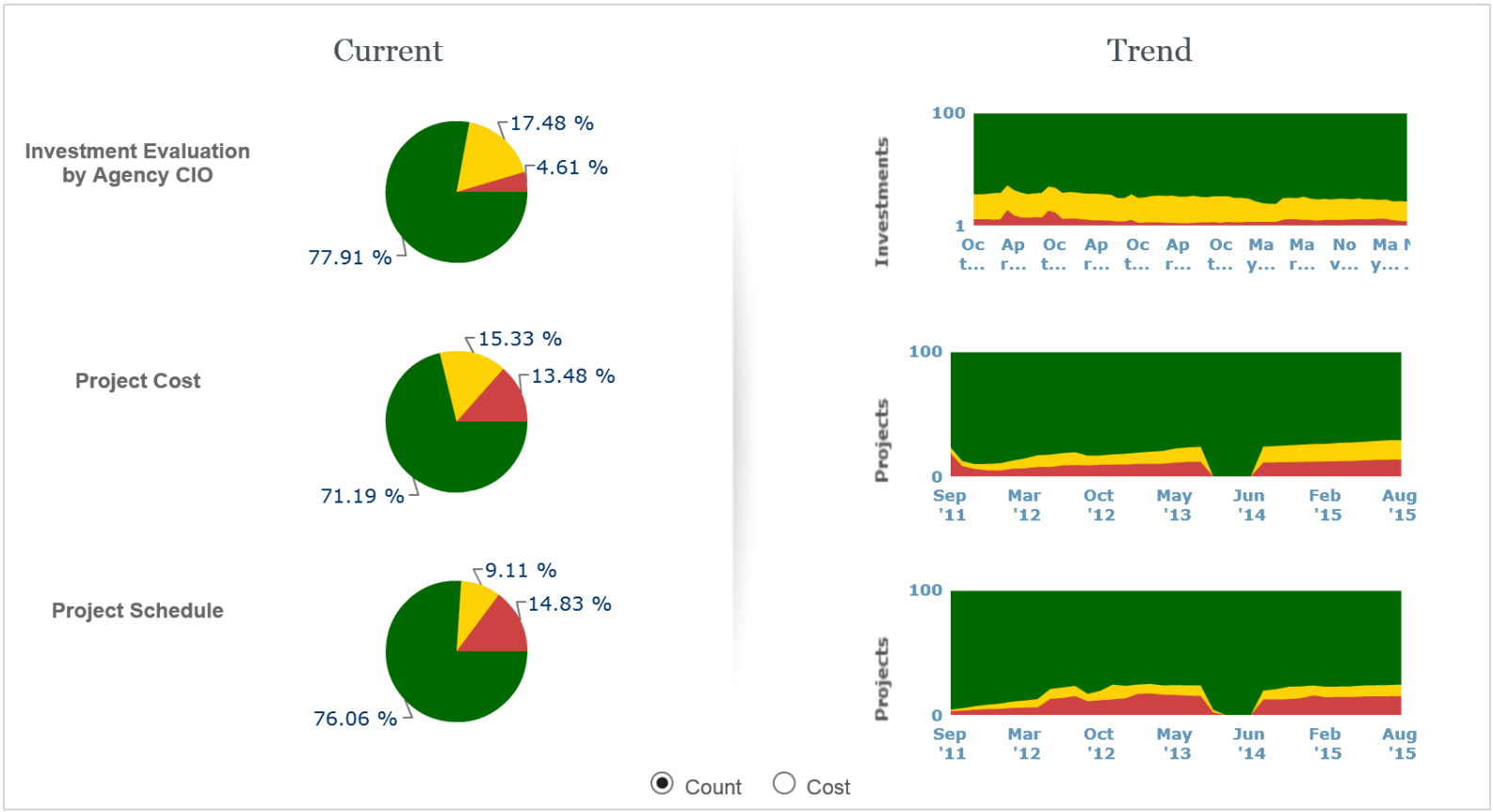
IT Dashboards

- Snapshot of metrics at a given point in time (often "right now")
- Offer "at a glance" idea of how things are going
- Often colors depict conditions:
  - Areas with problems (red)
  - Areas in good shape (green)
  - In-between or average (yellow)

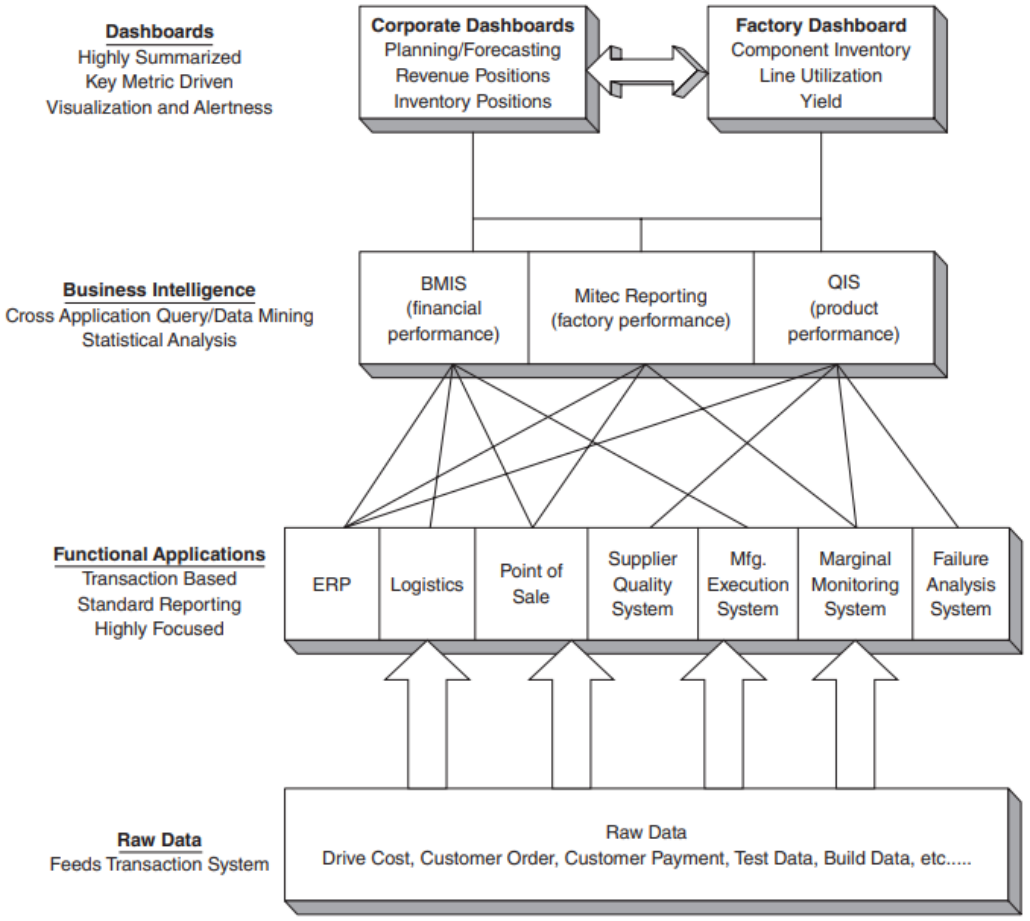
Sample Black & White Dashboard



ITDashboard.gov



Architecture for Dashboards



Funding the IT department

- How are costs of design, development, delivery and maintenance of IT systems recovered (or simply covered)?
  - Chargeback
  - Allocation
  - Corporate budget
- The first two are done for management reasons
- The latter covers costs using corporate coffers

Comparison of IT funding methods

Funding Method	Description	Why do it?	Why not do it?
Chargeback	Charges are calculated based on actual usage	Fairest method for recovering costs since it is based on actual usage	Must collect details on usage; often expensive and difficult
Allocation	Expenditures are divided by non-usage basis (revenues, headcount, etc.)	Less bookkeeping for IT	Users can question rates & basis of allocation Free riders
Corporate Budget	Corporate allocates funds to IT in annual budget - to general P&L	No billing to the businesses. No rates to compute. Encourages use of new technologies.	Have to compete with all other budgeted items for funds. Potential for overspending.

How to Determine Cost

- Basic method: add up costs of hardware, software, network, and people involved in IS.
- Real cost is not always easy to determine
  - Remains a mystery for many firms
- Some firms use Activity Based Costing
  - Counts the actual activities that go into a product or service
  - Costs those activities and charges them to the product or service

Total Cost of Ownership (TCO)

- Has become the industry standard.
- Looks beyond initial capital investments to include costs often forgotten. For example:
  - technical support
  - administration
  - training
- Estimates total annual costs per user for each potential infrastructure choice.
- Provide the best foundation for comparing to other IT and non-IT investments.

TCO Component Breakdown

- Shared components (servers and printers):
  - TCO divided among all users who access each
- When only certain groups of users possess certain components, segment the hardware analysis by platform.
- Soft costs, such as technical support, administration, and training are important to include

Figure 8.13 Soft cost considerations

Soft Cost Areas	Example Components of Cost	Source
Technical support	Hardware phone support	Call center
	In-person hardware troubleshooting	IT operations
	Hardware hot swaps	IT operations
	Physical hardware repair	IT operations
	Total cost of technical support	
Administration	Hardware setup	System administrator
	Hardware upgrades/modifications	System administrator
	New hardware evaluation	IT operations
	Total cost of administration	
Training	New employee training	IT operations
	Ongoing administrator training	Hardware vendor
	Total cost of training	
	Total soft costs for hardware	

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