CHAPTER 1
THE INFORMATION SYSTEMS STRATEGY TRIANGLE

Managing & Using Information Systems: A Strategic Approach (7th Edition),
Pearlson, Saunders, & Galletta

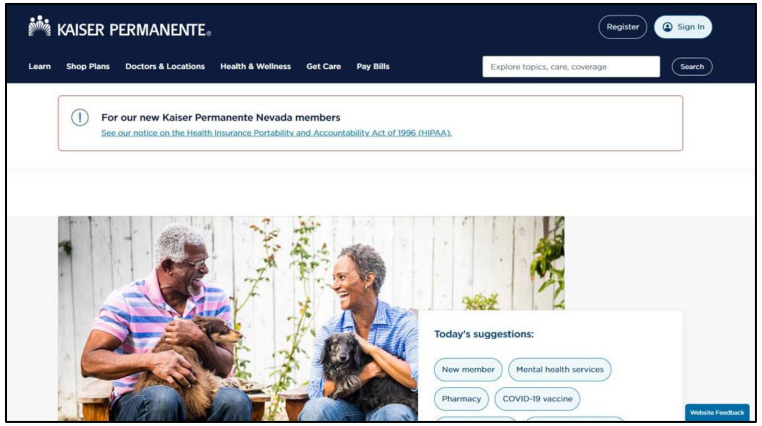
Chapter Introduction

- The Information Systems Strategy Triangle highlights the alignment necessary between decisions regarding business strategy, information systems, and organizational design.
- This chapter reviews models of business strategy, organizational strategy and design, and information systems strategy.
- It concludes with a simple framework for creating a social business strategy.

CASE: Kaiser Permanente (KP)

- In February 2015, health care giant Kaiser Permanente named Dick Daniels to the CIO position and the leadership team for the next stage of the company's business strategy: to provide better health care at lower costs.
- To achieve those goals, Kaiser Permanente, one of the nation's largest not-for-profit health care systems with over 9.5 million members and 2014 operating revenue (영업/운영 수익) of $56.4 billion, invested in numerous information systems projects aimed at streamlining operations, offering new services, and meeting government obligations.

KAISER PERMANENTE®



CASE: Kaiser Permanente (KP)

- For example, in 2014, 13% of all the medical appointments were fulfilled digitally--through e-mail--to the delight of patients who did not have to make a trip to the doctor's office and to the delight of doctors who were able to check in on their patients, particularly those with chronic conditions (만성질환), more frequently.
- Doctors particularly liked this because their annual bonuses were based, in part, on improvements in patient health metrics such as lower blood pressure, reduced blood sugar levels if at risk for diabetes, and improvement in cholesterol scores rather than on the number of tests they ordered or the total billing they brought in.

CASE: Kaiser Permanente (KP)

- The organization invested heavily in video conferencing technology, mobile apps, and analytics as they finished implementing a $4 billion electronic health records system, KP HealthConnect.
- KP HealthConnect began in 2003, but by 2008, all members had online access to their health records; by 2010, all system services were available at all medical offices and hospitals in the system; and by 2012, all members had access to their health records on mobile devices.

CASE: Kaiser Permanente (KP)

- Kaiser Permanente has been a regular innovator in the use of technologies, being one of the first health care organizations to experiment with chat rooms, secure messaging, and private e-mail correspondence between patients, physicians, and care providers.
- The new system connects each member to all caregivers and services available at Kaiser Permanente.
- Further, it enabled patients to participate in the health care they received at a new level and access information directly from the system.

CASE: Kaiser Permanente (KP)

- The organizational design supported the business strategy of better health care at lower costs.
- At the core of this strategy was a shift from a "fix-me system" with which patients seek health care when something is broken and needs repair to a system that was truly proactive and focused on promoting health.
- Under the "fix-me system," health care was expensive and often sought too late to fix the problem.
- Instead, the Kaiser Permanente strategy focused on promoting health, enabling identification of problems before they became serious issues.

CASE: Kaiser Permanente (KP)

- For example, those in need of more exercise may receive a prescription to take a walk and an e-mail reminder from health care providers to reinforce the new behavior.
- Staff incentive systems were aligned with this behavior, too.
- Physicians were all paid a flat salary and end-of-year bonuses if their patients achieved better health.
- All caregivers were rewarded for guiding people into making behavioral choices that were likely to keep them well.

CASE: Kaiser Permanente (KP)

- Kaiser Permanente has reported higher quality of care and fewer malpractice (의료 과실/사고) cases as a result of HealthConnect.
- Kaiser reported that HealthConnect is the largest civilian health information system in the United States.
- The clinical (임상) information system is highly integrated, including clinical information, appointments, services, registration, and billing.
- Before HealthConnect, patients seldom were able to find chart information by phone or in the emergency room.

CASE: Kaiser Permanente (KP)

- Even by visiting, only 40-70% could find that information.
- But now 100% is available through all of those mechanisms.
- New features include integrated video visits, express check-in, web-accessible lab results, electronic notifications of room and prescription availability, a mobile app, tablet entry of outpatient information into a mobile-enabled "dashboard," and other features, which assist both clinicians and patients.

CASE: Kaiser Permanente (KP)

- In total, 61 % of transactions on the website are accomplished via mobile devices.
- Perhaps most importantly, users of the portal are 2.6 times more likely to remain loyal to Kaiser Permanente than nonusers.
- In 2014, Kaiser Permanente's cloud-based Generation 2 Platform was launched to support the development of clinical and operational services.

CASE: Kaiser Permanente (KP)

- Within two years, more than 1,000 systems had been delivered with the help of the platform--all within a day of their request.
- Between 2014 and the beginning of 2019, Kaiser Permanente had grown from 9.5 million to 12.2 million health plan members, and total operating revenue had grown from $56.4 billion to $79.7 billion.
- This growth provides some confidence that the new system has been successful and meets the needs of patients, clinicians, and management.

CASE: Kaiser Permanente (KP)

- Given the material in this chapter, the reader is likely to assume that we will claim that the success at Kaiser Permanente was achieved in part because of the alignment between its business strategy, its IS strategy, and its organization design.
- Kaiser actually did that for us, by stating that they credit their success to the clarity of its mission statement, alignment of the organization's structure and incentives, and the integrated information technology.

➢ Credit A to B: A를 B의 공으로 믿다[공이라고 말하다]

CASE: Kaiser Permanente (KP)

- Physicians were part of the decision-making processes.
- Managers were involved in the design and implementation of the IS.
- The decision to move from a "fix-me system" to a "proactive health system" was not made in isolation from the organization or the IS.
- The IS department is not an island within a firm.
- Rather, IS manages an infrastructure that is essential to the firm's functioning.

CASE: Kaiser Permanente (KP)

- Further, the Kaiser Permanente case illustrates that a firm's IS must be aligned with the way it manages its employees and processes.
- For Kaiser Permanente, it was clear that not only did the physicians need a fast, inexpensive, and useful way to communicate with patients outside of regular in-person appointments but also incentive systems and patient service processes had to be updated.
- IS provided a solution in conjunction with new operational and control processes.

The Information Systems Strategy Triangle

Figure 1.1.1 The Information Systems Strategy Triangle

The Information Systems Strategy Triangle

- Successful firms have an overriding business strategy that drives both organizational strategy and IS strategy.
  - Successful firms carefully balance these three strategies--they purposely design their organizational and IS strategies to complement their business strategy.
- IS strategy can itself affect and is affected by changes in a firm's business and organizational design.
  - The business, IS, and organizational strategies must constantly be adjusted.

- Overriding: 다른 무엇보다 더 중요한, 최우선시 되는

The Information Systems Strategy Triangle

- IS strategy always involves consequences--intended or not-within business and organizational strategies.
  - Success can be achieved only by specifically designing all three components of the strategy triangle so they properly complement each other.

Figure 1.1.2 The Information Systems Strategy Triangle

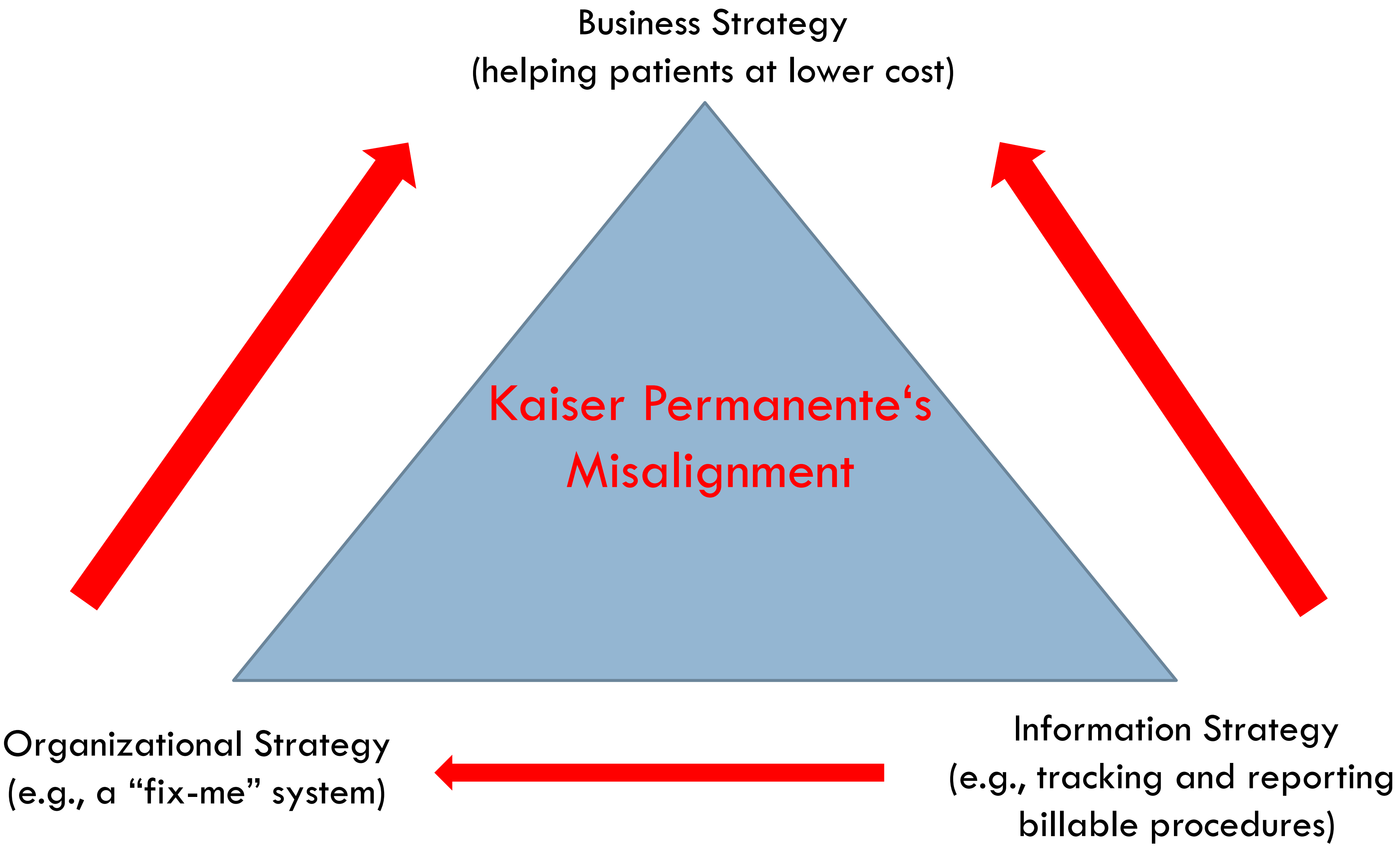


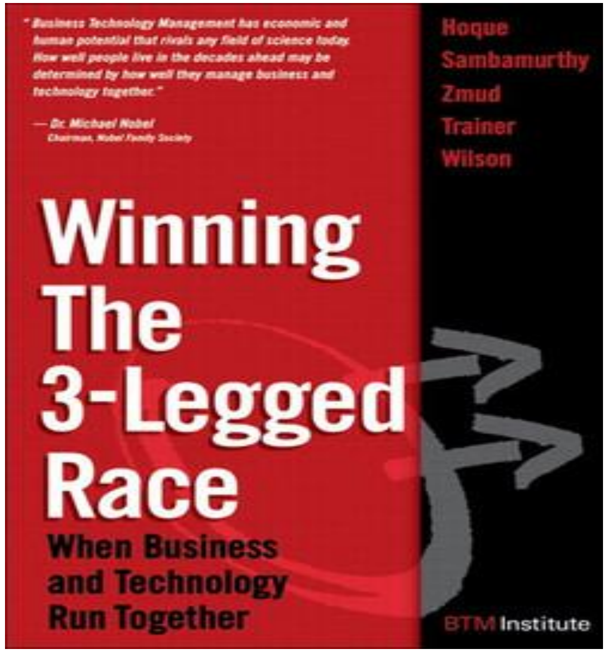
Figure 1.1.3 The Information Systems Strategy Triangle

The Information Systems Strategy Triangle

- To correct the misalignment described earlier, Kaiser Permanente used online services to enable quick communications between patients, physicians, and care providers.
- Further, it changed its bonus structure to focus on health rather than billing amounts.
- The new systems realign people, process, and technology to provide better service, save time, and save money.

Alignment

- The book *Winning the 3-Legged Race* defines alignment as the situation in which a company's current and emerging business strategy is enabled and supported, yet unconstrained, by technology.

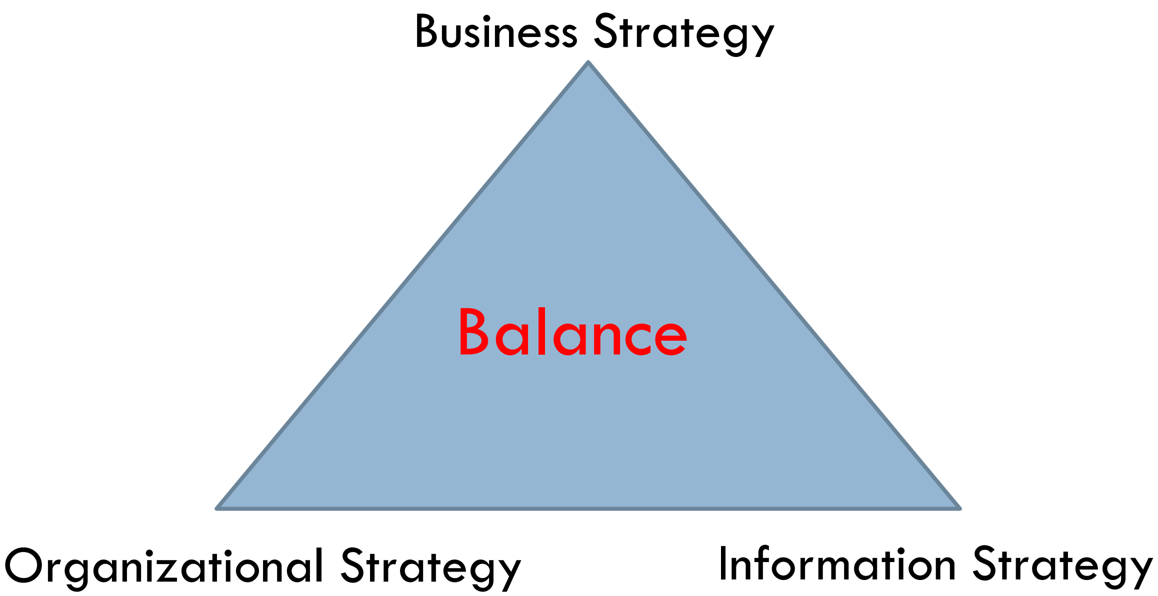


Alignment

- The authors suggest that although alignment is good, there are higher goals, namely, synchronization and convergence, toward which companies should strive.
  - With synchronization, technology not only enables current business strategy but also anticipates and shapes future business strategy.
  - Convergence goes one step further by exhibiting a state in which business strategy and technology strategy are intertwined and the leadership team members operate almost interchangeably.

Alignment

- Although we appreciate the distinction and agree that firms should strive for synchronization and convergence, *alignment* in this text means any of these states, and it pertains to the balance between organizational strategy, IS strategy, and business strategy.



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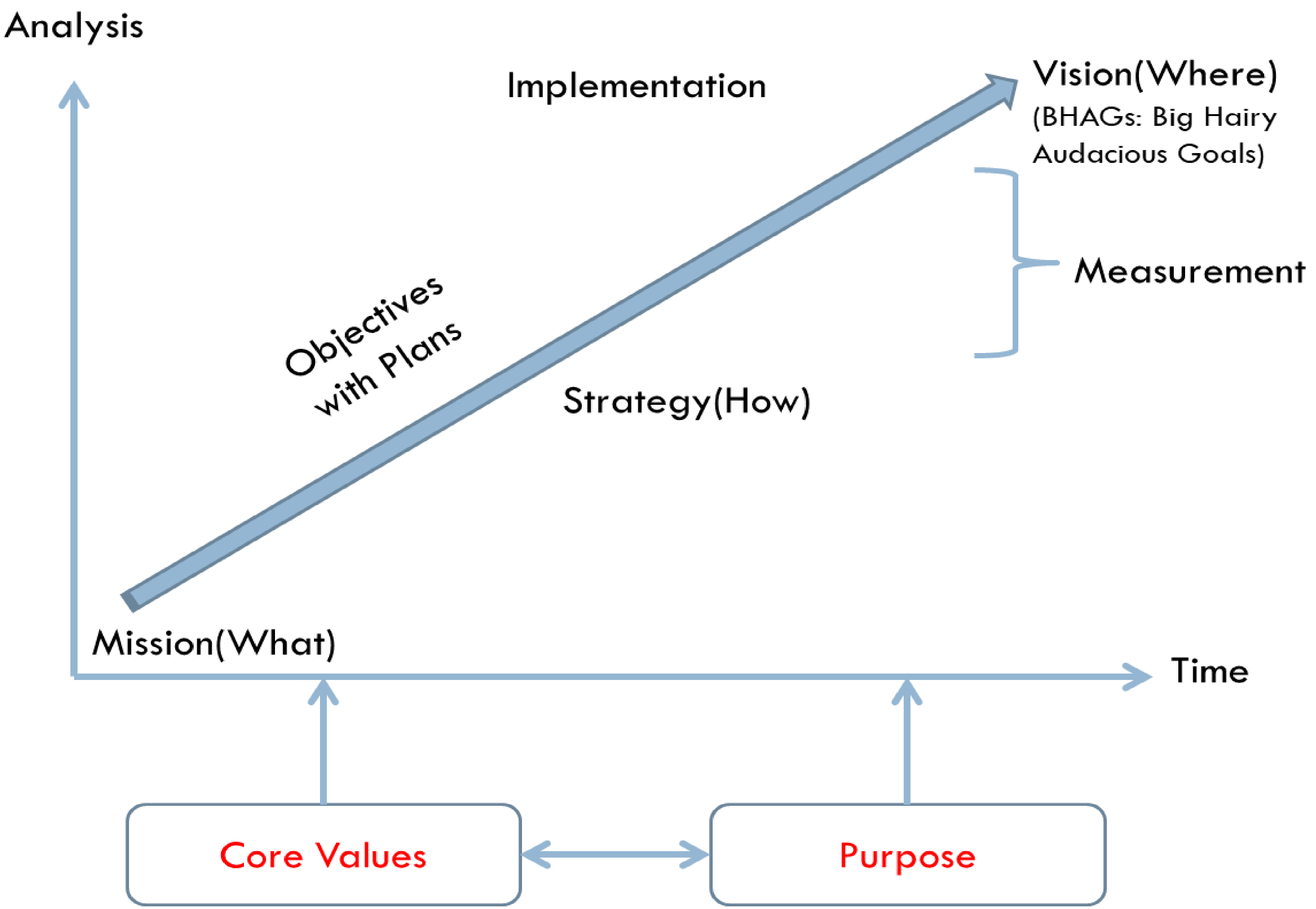
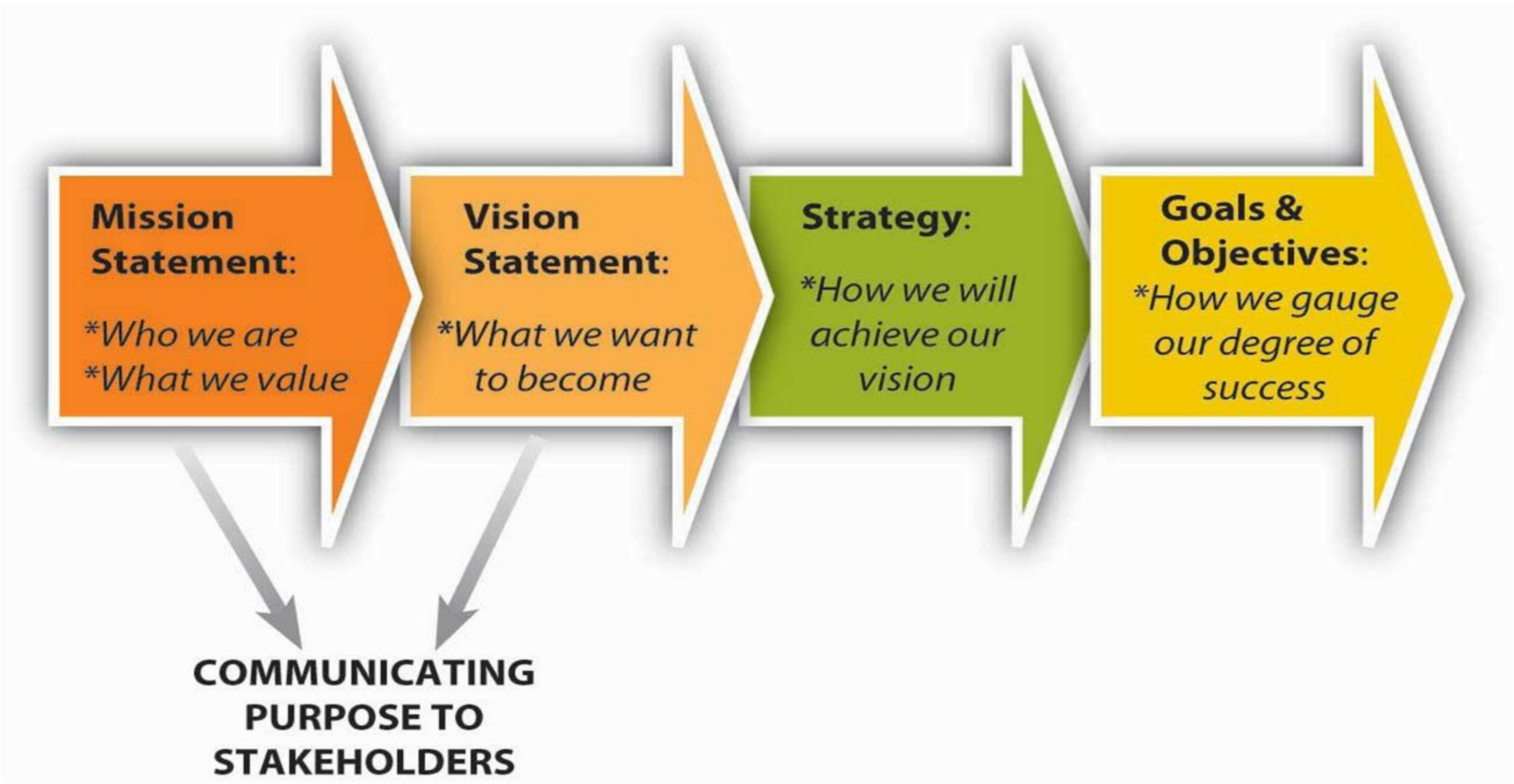
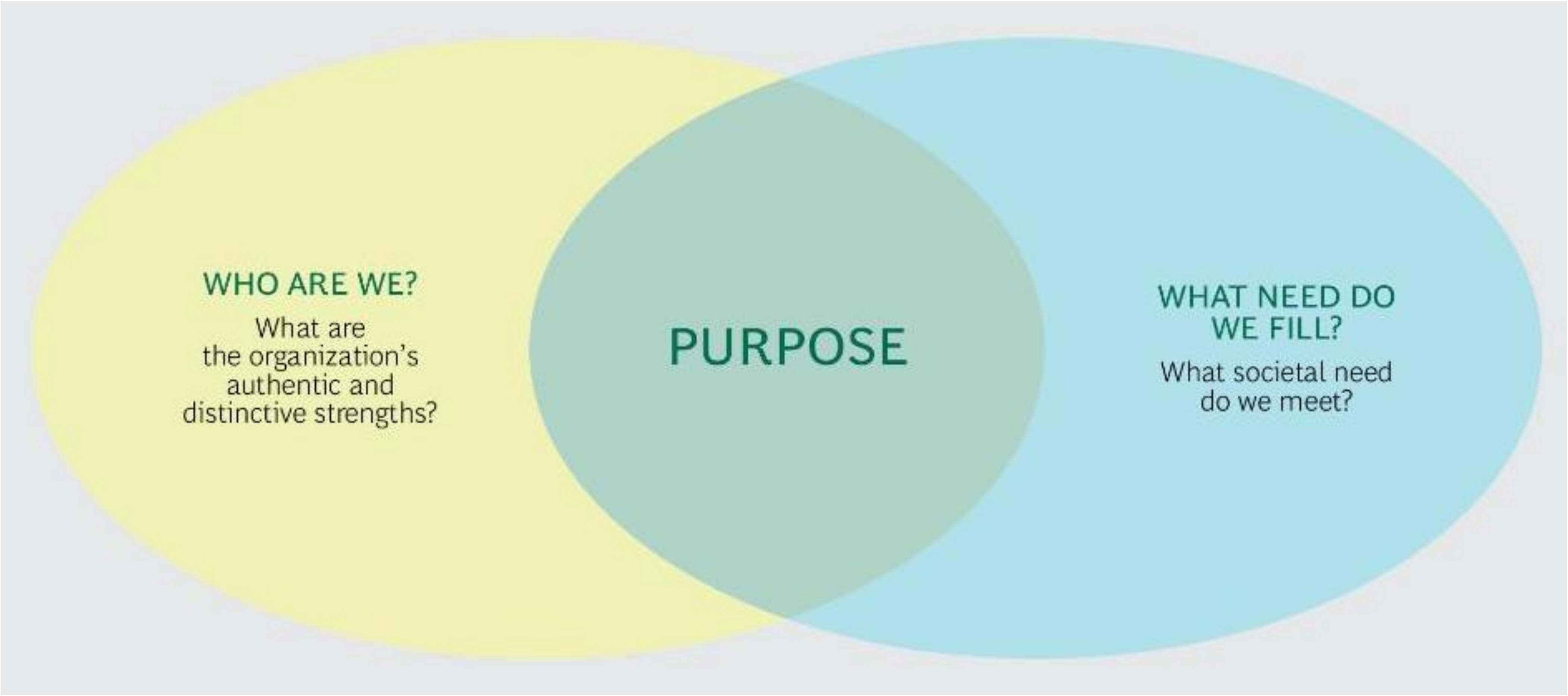
Brief Overview of Business Strategy Frameworks

- A strategy is a coordinated set of actions to fulfill objectives, purposes, and goals.
- The essence of a strategy is setting limits on what the business will seek to accomplish.
- Strategy starts with a mission.
- A mission is a clear and compelling (convincing) statement that unifies an organization's effort and describes what the firm is all about (i.e., its purpose).


Analysis
Implementation
Vision(Where)
(BHAGs: Big Hairy
Audacious Goals)
Measurement
Objectives
with Plans
Strategy(How)
Mission(What)
Time
Core Values
Purpose


Mission Statement:
*Who we are
*What we value
Vision Statement:
*What we want to become
Strategy:
*How we will achieve our vision
Goals & Objectives:
*How we gauge our degree of success
COMMUNICATING PURPOSE TO STAKEHOLDERS


WHO ARE WE?
What are the organization's authentic and distinctive strengths?
PURPOSE
WHAT NEED DO WE FILL?
What societal need do we meet?

Relating Purpose, Vision, and Mission

Mission
Is what we do
What we do each day to climb the mountain

Vision
Is where we're going
The next big mountain we're going to summit

Purpose
Is why we exist
Our timeless North Star—the light that guides us

Mission Statement

Company	Mission Statement
Zappos	• To provide the best customer service possible. • Internally we call this our WOW philosophy.
Amazon	• To be Earth's most customer-centric company, where customers can find and discover anything they might want to buy online, and endeavors to offer its customers the lowest possible prices. . . (recognizing the importance of). . . Consumers, Sellers, Content Creators, and Developers & Enterprises.
L.L. Bean	• Being outside brings out the best in us. • That's why we design products that make it easier to take longer walks, have deeper talks and never worry about the weather.

Figure 1.2 – Mission Statements of Three Retail Businesses

Brief Overview of Business Strategy Frameworks

- A business strategy is a plan articulating where a business seeks to go and how it expects to get there.
- It is the means by which a business communicates its goals.
- Management constructs this plan in response to market forces, customer demands, and organizational capabilities.
  - Market forces create the competitive context for the business.
  - Customer demands comprise the wants and needs of the individuals and companies who purchase the products and services available in the marketplace.
  - Organizational capabilities include the skills and experience that give the corporation a currency that can add value in the marketplace.

Business Models versus Business Strategy

- One component of the business strategy is the *business model*, or the "blueprint of how a company does business.“
- The business model can be used to create new products and services that add value to its customers and partners (value creation) and to describe how it will make money from that value it has created (value capture).
- Some might argue that a business model is the outcome of strategy.
- One way to capture the value created by a business model is to employ a *revenue model*, which generates revenue for the company and captures some of the value created by the business model.

Revenue Model

- *Selling products or services*: Customers make purchases.
- *Subscription*: Customers pay a recurring fee for the product or service.
- *Advertising*: Customers access the product or service for "free;" and sponsors or vendors pay fees for advertising that goes with the product or service.
- *Cost plus*: Somewhat like a traditional retailer, customers purchase the product or service for a specific price that is usually the cost plus some markup for profit.
- *Renting/Licensing*: Customers pay a fee to use the product or service for a specified period of time.

Revenue Model

- *All-you-can-eat*: Customers pay one fee for access to as much of the product or service as they want to consume, usually over a specific period of time.
- *Freemium*: Customers get something for "free," and the company makes money from selling customers something after they get the giveaway (증정품, 경품).
  - This is similar to a business model used in brick-and-mortar (offline) businesses that give away something or sell something for a very low price,
  - but the customer has to pay for refills or upgrades such as giving razors away but making money from selling razor blades.

Revenue Model

- A business model can create value without bringing in new revenue from customers.
- A common business model can use *cost displacement*, in which case a firm funds a project or creates a new service by cost savings, such as replacing personnel by adding new customer self-service options.

Data-Driven Business Models

- *Data users*, companies that leverage big data for internal purposes to improve their operations or develop new products and services for its customers.
- *Data suppliers*, companies that sell big data that they have harvested.
- *Data facilitators*, companies that supply data users and suppliers with big data infrastructure solutions (e.g., hardware and software tools) and services (e.g., consulting and outsourced analytics services).

The Generic Strategies Framework

- Michael Porter: How businesses can build a competitive advantage
- Three primary strategies for achieving competitive advantage:
  - Cost leadership – lowest-cost producer.
  - Differentiation – product is unique.
  - Focus – limited scope – can accomplish this via cost leadership or differentiation *within the segment*

The Generic Strategies Framework

Strategic Target		Strategic Advantage	
		Uniqueness Perceived by Customer	Low Cost Position
	Industry Wide	Differentiation	Cost Leadership
	Particular Segment Only	Focus	

Figure 1.3.1 Three Strategies for Achieving Competitive Advantage

The Generic Strategies Framework

		Strategic Advantage	
Strategic Target		Uniqueness Perceived by Customer	Low Cost Position
	Industry Wide	Differentiation Progressive, Apple	Cost Leadership Wal-Mart
	Particular Segment Only	Focus Marriott International Ritz Carlton	Marriott

Figure 1.3.2 Three Strategies for Achieving Competitive Advantage: Examples

Dynamic Environment Strategies

- Organizations need to be able to respond instantly and change rapidly, which requires dynamic structures and processes.
- One example of this type of approach is the hypercompetition framework.
- Hypercompetition frameworks suggest that the speed and aggressiveness of the moves (수단) and countermoves (대응수단) in a highly competitive and turbulent market create an environment in which advantages are rapidly created and eroded.

Dynamic Environment Strategies

- In a hypercompetitive market, trying to sustain a specific competitive advantage can be a deadly distraction because the environment and the marketplace change rapidly.
- To manage the rapid speed of change, firms value agility and focus on quickly adjusting their organizational resources to gain competitive advantage.

Dynamic Environment Strategies

- Successful concepts in hypercompetitive markets include:

Dynamic Capabilities

- Means of orchestrating a firm's resources in the face of turbulent environments.
- In particular, the dynamic capabilities framework focuses on the ways a firm can integrate, build, and reconfigure internal and external capabilities, or abilities, to address rapidly changing environments.
- These capabilities are built rather than bought.
- They are embedded in firm-specific routines, processes, and asset positions.
- Thus, they are difficult for rivals to imitate.
- In sum, they help determine the speed and degree to which the firm can marshal (gather, collect) and align its resources and competences to match the opportunities and requirements of the business environment.

Creative Destruction

- The changes in competitive dynamics are particularly striking in sectors that spend the most on IT.
- An example of creative destruction is provided in Apple's cannibalizing its own products.
- Steve Jobs, Apple's founder and former CEO, felt strongly that if a company was not willing to cannibalize its own products, someone else would come along and do it for them.

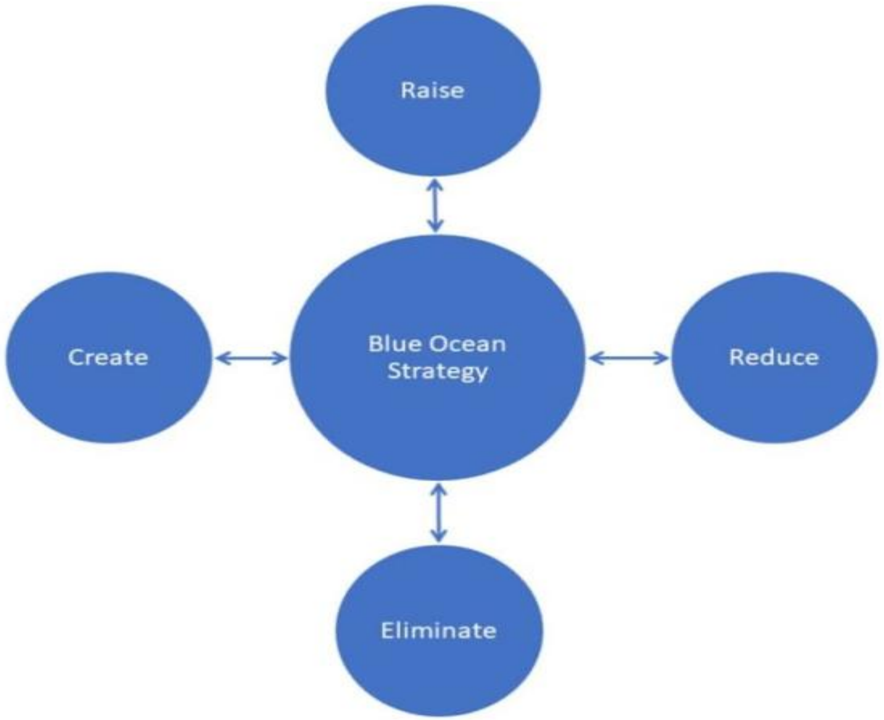
➢ Cannibalize: (비슷한 신상품 도입으로) 자사품의 매출 감소를 가져오다

Creative Destruction

- That was evident in the way Apple introduced the iPhone while iPod sales were brisk (speedy) and the iPad while its Macintosh sales were strong.
- Apple continues to exhibit this strategy with subsequent releases of new models of all of its products.

Blue Ocean Strategy

- Firms adopt a blue ocean strategy in which they create new demand in untapped marketspaces where they have the "water" to themselves.
- When applying the blue ocean strategy, the goal is not to beat the competition but to make it irrelevant.
- This is what Dell did when it challenged current industry logic by changing the computer purchasing and delivery experiences of its customers.



Digital Strategy

- Defined as "a business strategy inspired by the capabilities of powerful, readily accessible digital technologies (like social media, analytics, cloud, and Internet of Things), intent on delivering unique, integrated business capabilities in ways that are responsive to constantly changing market conditions".
- This can be enacted by building customer loyalty and trust with excellent personalized and integrated customer experiences (customer engagement) or by integrating data, services, and products to create digital solutions (digitized solutions strategy).

Digital Strategy

- A digital strategy perforce (necessarily) requires a close alignment with the IS strategy.
- In order to execute a digital strategy, a company must have an operational backbone (or the technology and business capability to deliver efficient and reliable core operations) and a digital service platform (or the technology and business capability to pave the way for developing and implementing digital innovations).
- Kaiser Permanente's HealthConnect provided the operational backbone to integrate various systems to effectively and efficiently use clinical information.
- Its Generation 2 Platform is a digital service platform that has made it possible to more easily produce digital innovations across clinical and operational departments.

Strategic Approach	Key Idea	Application to Information Systems
Porter's generic strategies	• Firms achieve competitive advantage through cost leadership, differentiation, or focus.	• Understanding which strategy is chosen by a firm is critical to choosing IS to complement the strategy.
Dynamic environment strategies	• Speed, agility, and aggressive moves and countermoves by a firm create competitive advantage.	• The speed of change is too fast for manual response making IS critical to achieving business goals.

Figure 1.4 Summary of Strategic Approaches and IT Applications

Why Are Strategic Advantage Models Essential to Planning for Information Systems?

- A general manager who relies solely on IS personnel to make all IS decisions not only gives up authority over IS strategy but also hampers crucial future business decisions.
- In fact, business strategy should drive IS decision making, and changes in business strategy should entail reassessments of IS.
- Moreover, changes in IS capabilities or potential should trigger reassessments of business strategy--as in the case of the Internet when companies that understood or even considered its implications for the marketplace quickly outpaced their competitors who failed to do so.

Why Are Strategic Advantage Models Essential to Planning for Information Systems?

- For the purposes of our model, the Information Systems Strategy Triangle, understanding business strategy means answering the following questions:
  - What is the business goal or objective?
  - What is the plan for achieving it? What is the role of IS in this plan?
  - Who are the crucial competitors and partners, and what is required of a successful player in this marketplace?
  - What are the industry forces in this marketplace?

Brief Overview of Organizational Strategies

- Organizational strategy includes the organization's design as well as the choices it makes to define, set up, coordinate, and control its work processes.
- How a manager designs the organization impacts every aspect of operations from dealing with innovation to relationships with customers, suppliers, and employees.
- The organizational strategy is a plan that answers the question: "How will the company organize to achieve its goals and implement its business strategy?"
- This framework (Figure 1.5) suggests that the successful execution of a company's organizational strategy comprises the best combination of organizational, control, and cultural variables.

Brief Overview of Organizational Strategies

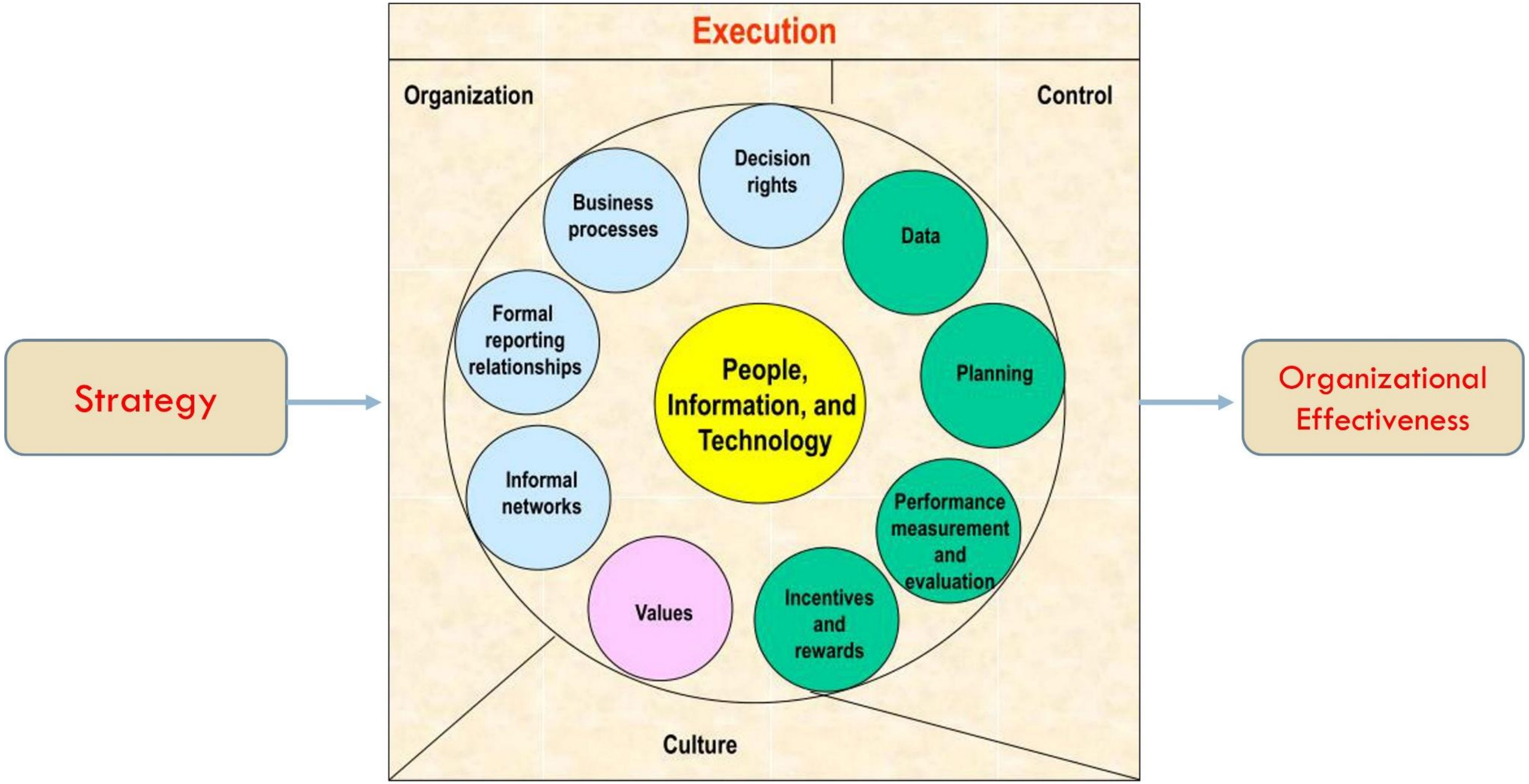


Figure 1.5.1 Managerial Levers Model

Brief Overview of Organizational Strategies

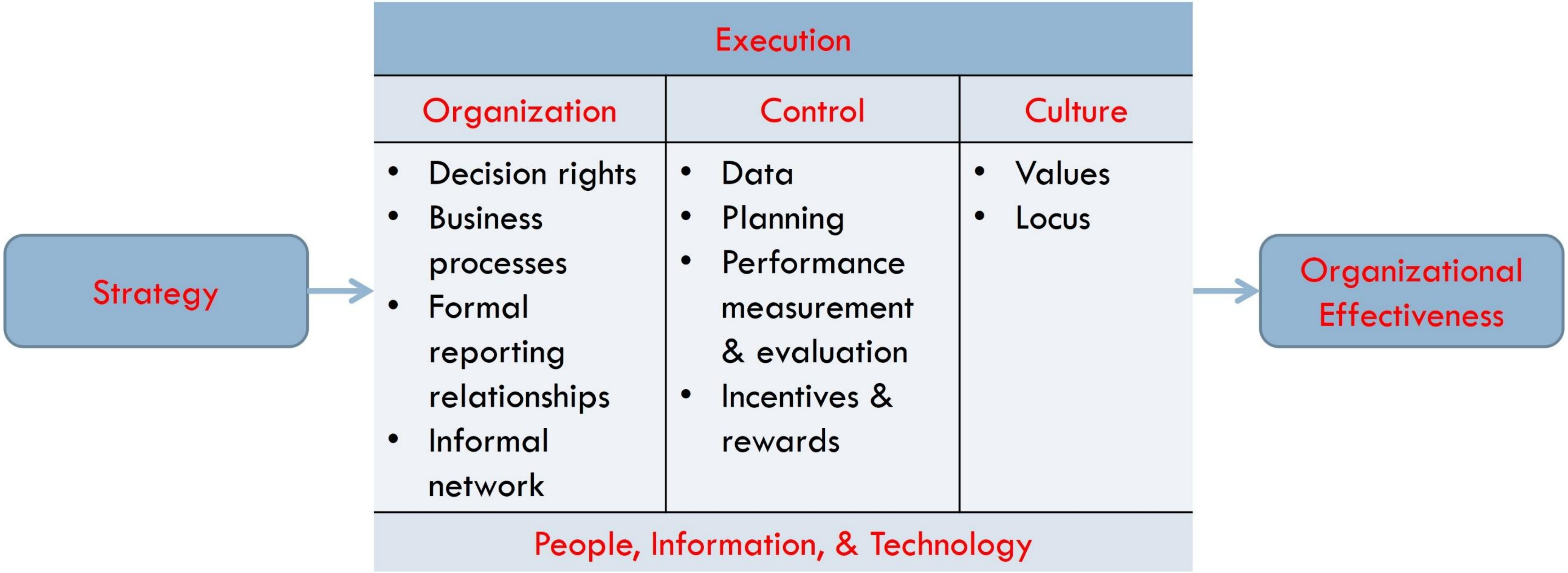


Figure 1.5.2 Managerial Levers Model

Brief Overview of Organizational Strategies

- Understanding organizational design means answering the following questions:
  - What are the important structures and reporting relationships within the organization?
  - Who holds the decision rights to critical decisions?
  - What are the important people-based networks (social and informational), and how can we use them to get work done better?
  - What control systems (management and measurement systems) are in place?
  - What are the culture, values, and beliefs of the organization?
  - What is the work that is performed in organizations, who performs it, and where and when is it performed?
  - What are the key business processes?

Brief Overview of Information Systems Strategy

- IS strategy is the plan an organization uses to provide information services.
- IS allow a company to implement its business strategy.
- Business strategy is a function of:
  - Competition (What does the customer want and what does the competition do?),
  - Positioning (In what way does the firm want to compete?), and
  - Capabilities (What can the firm do?).
- IS help determine the company's capabilities.
  - Figure 1.6 IS Strategy Matrix

	What	Who	Where
Hardware	• The physical devices of the system	• System users and managers	• Physical location of devices (cloud, datacenter, etc.)
Software	• The programs, applications, and utilities	• System users and managers	• The hardware it resides on and physical location of that hardware
Networking	• The way hardware is connected to other hardware, to the Internet and to other outside networks.	• System users and managers • Company that provides the service	• Where the nodes, wires, and other transport media are
Data	• Bits of information stored in the system	• Owners of data • Data administrators	• Where the information resides

Figure 1.6 IS Strategy Matrix

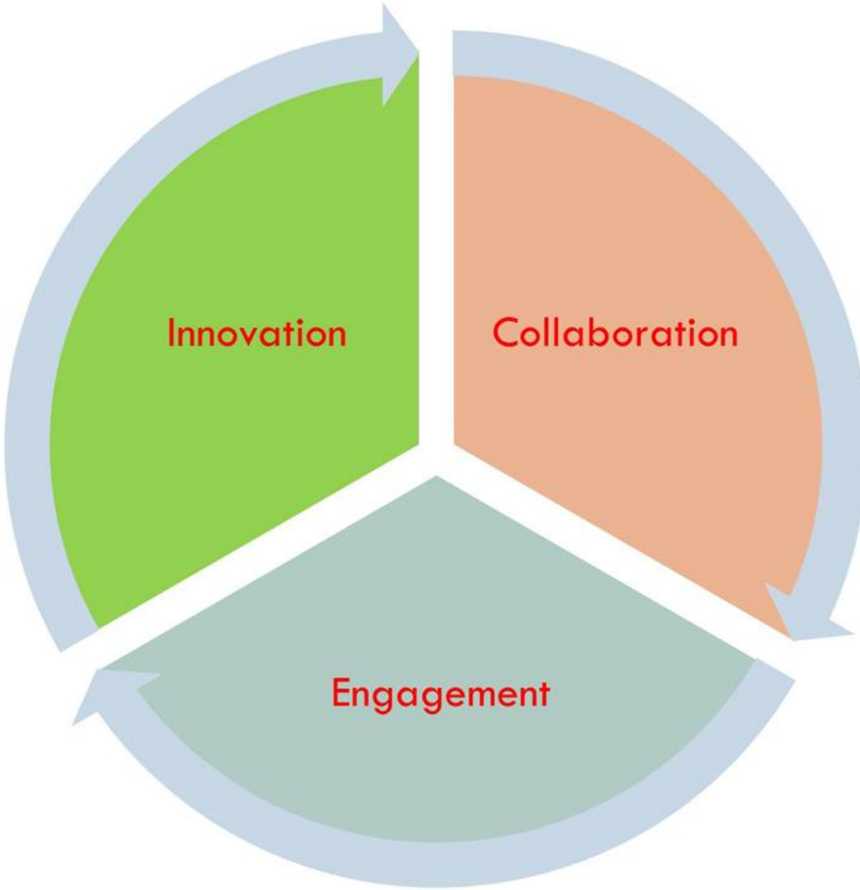
✓ The purpose of the matrix in Figure 1.6 is to give the manager a high-level view of the relation between the four IS infrastructure components and the other resource considerations that are keys to IS strategy.

Building a Social Business Strategy

- Some companies use social IT as quick solutions for business opportunities, but others build a social business strategy that considers the application of social IT tools and capabilities to solve business opportunities holistically.
- A social business strategy is a plan of how the firm will use social IT that is aligned with organization strategy and IS strategy.
- Social business strategy includes a vision of how the business would operate if it seamlessly and thoroughly incorporated social and collaborative capabilities throughout the business model.
- Social business strategy answers the same type of questions of what, who, and where, as do many other business strategies.

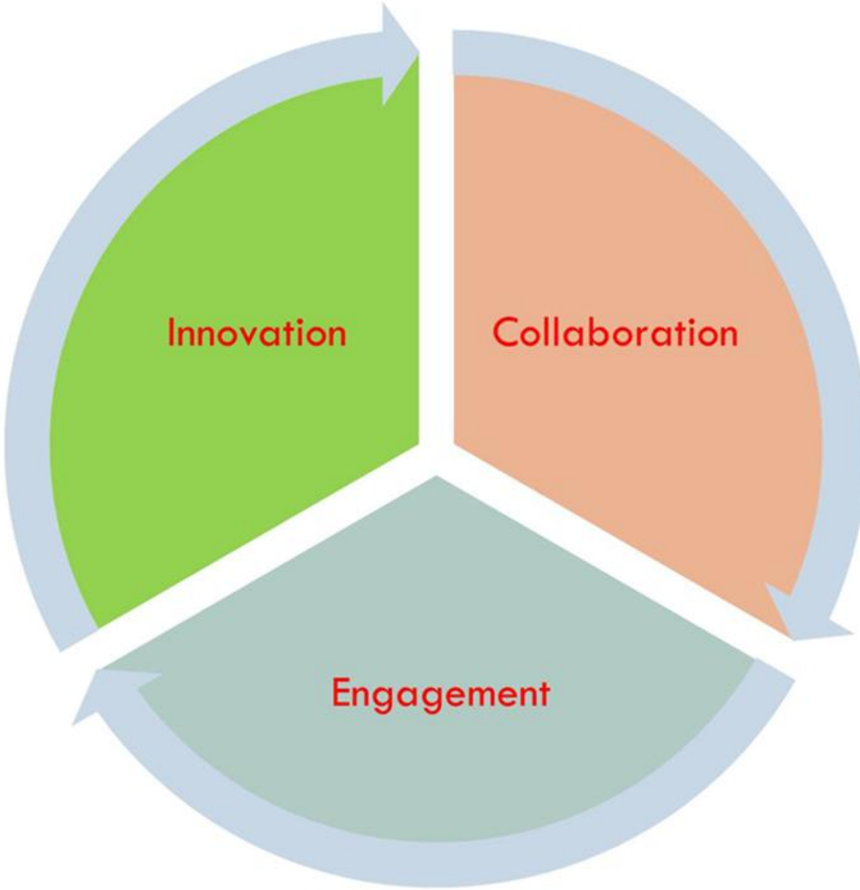
Building a Social Business Strategy

- Social businesses infuse social capabilities into their business processes.
- Most social business opportunities fall into one of three categories:
  - Collaboration
  - Engagement
  - Innovation



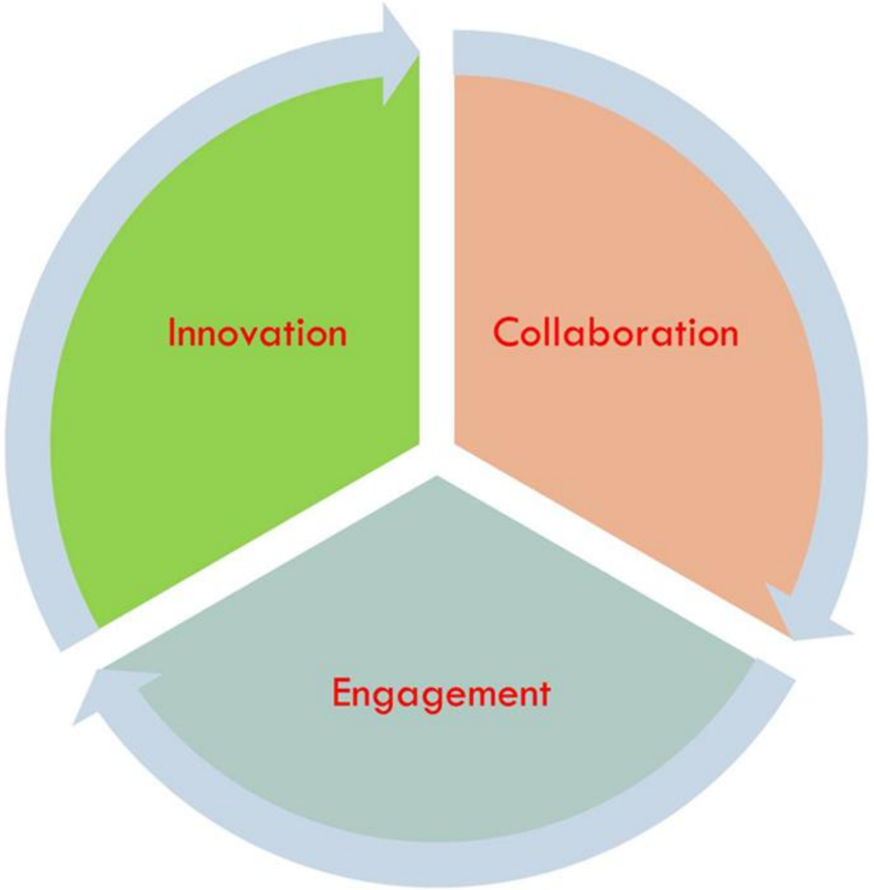
Social Business Strategies: Collaboration

- Using social IT to extend the reach of stakeholders, both employees and those outside the enterprise walls.
- Social IT such as social networks enable individuals to find and connect with each other to share ideas, information, and expertise.



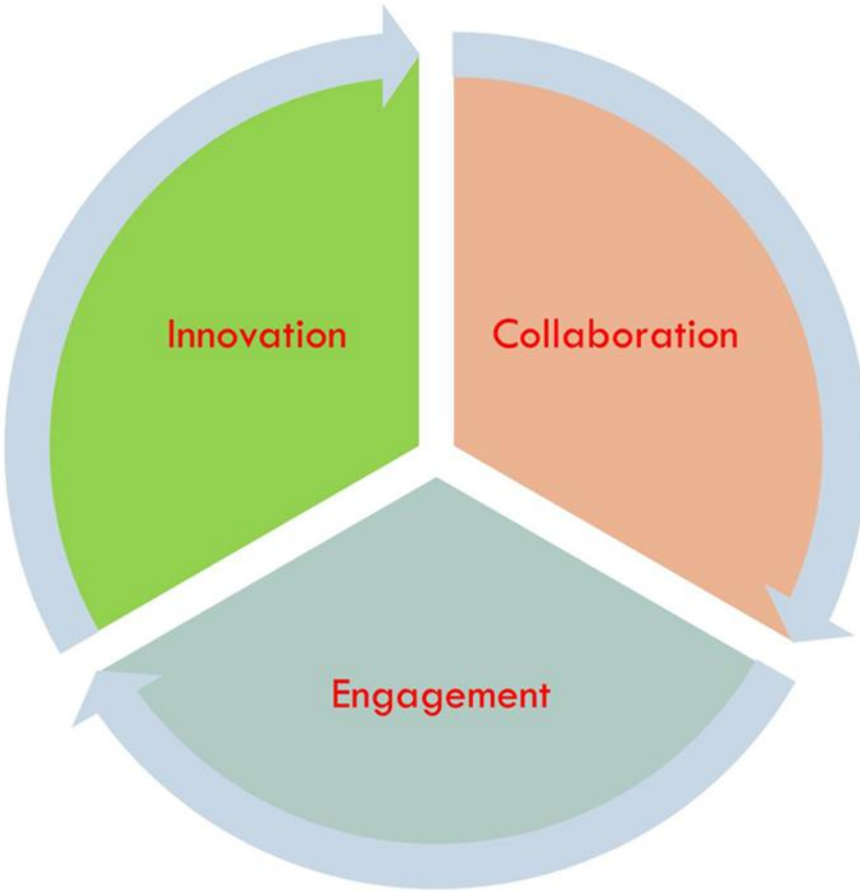
Social Business Strategies: Engagement

- Using social IT to involve stakeholders in the traditional business of the enterprise.
- Social IT such as communities and blogs provide a platform for individuals to join in conversations, create new conversations, offer support to each other, and other activities that create a deeper feeling of connection to the company, brand, or enterprise.



Social Business Strategies: Innovation

- Using social IT to identify, describe, prioritize, and create new ideas for the enterprise.
- Social IT offer the community members a "super idea box" where individuals suggest new ideas, comment on other ideas, and vote for their favorite idea, giving managers a new way to generate and decide on products and services.



Applications of Social IT

- National Instruments (ni.com) is an example of a company that has embraced social IT and created a social business strategy.
- Managers developed a branded community consisting of a number of social IT tools like Facebook®, Twitter®, blogs, forums, and more.
- By thinking holistically about all of the ways customers and employees might interact with each other, the branded community has become the hub of collaboration, engagement and idea generation.