15.320 Strategic Organizational Design

Session 14
How are things changing?

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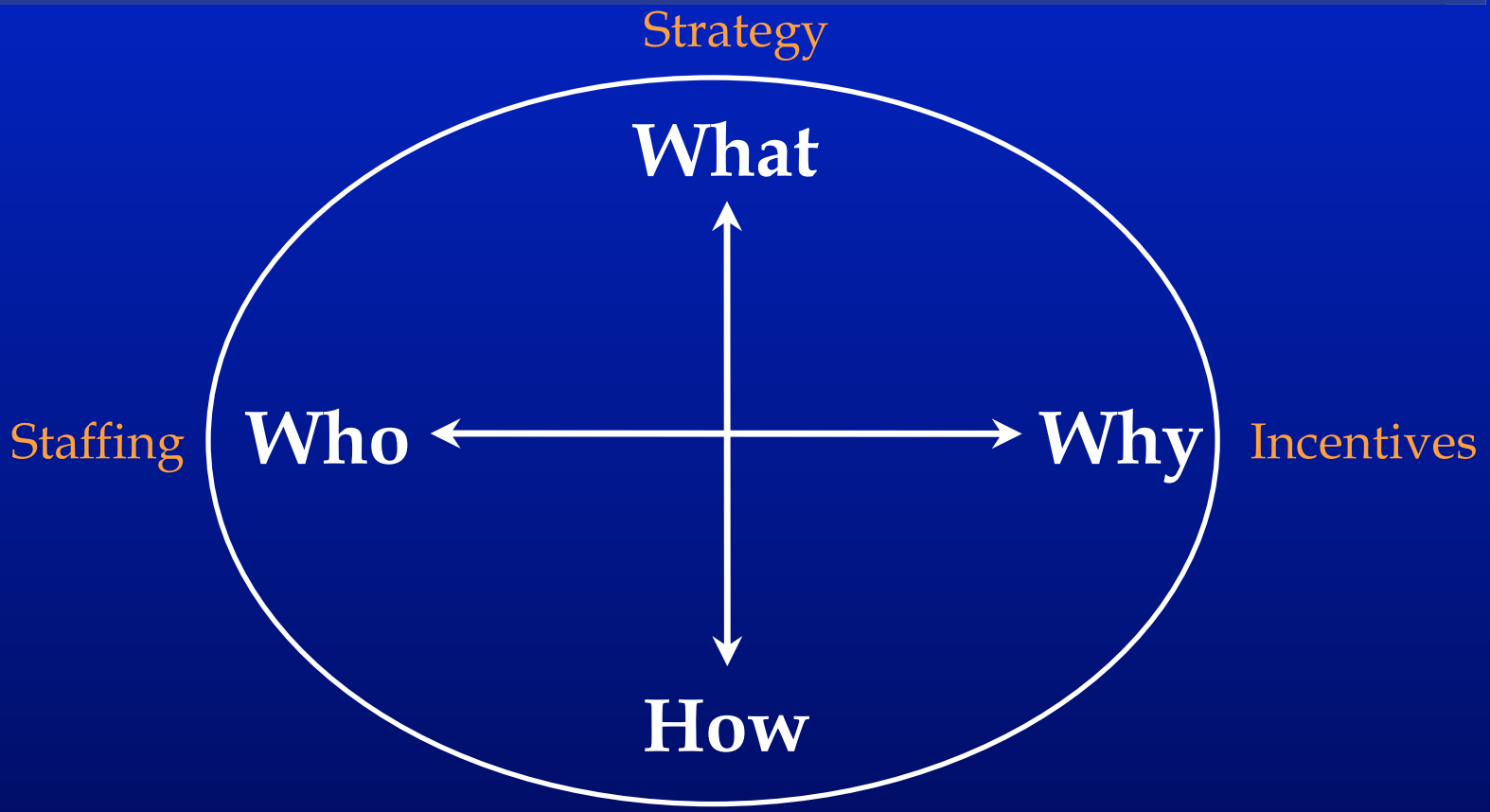
Two key messages of this course

- There are patterns in organizational design.
- Organizational design is changing.

Outline

- Quick review
  - Organizational design patterns for hierarchies
- How are things changing?
  - Organizational design patterns for crowds

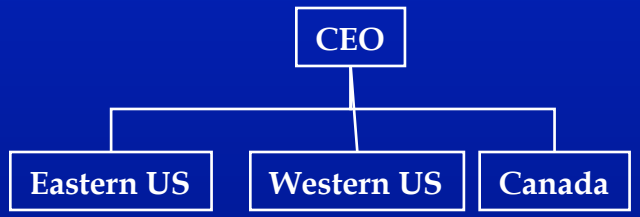
Elements of organizational patterns



How can activities be grouped?

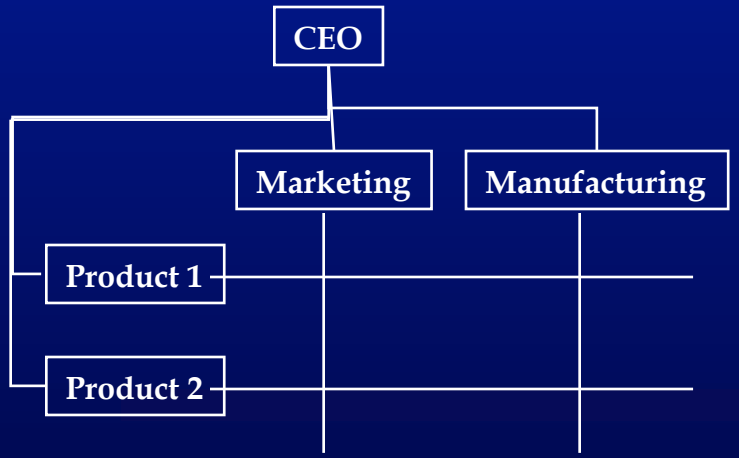
Functional Organization

Geographical Organization



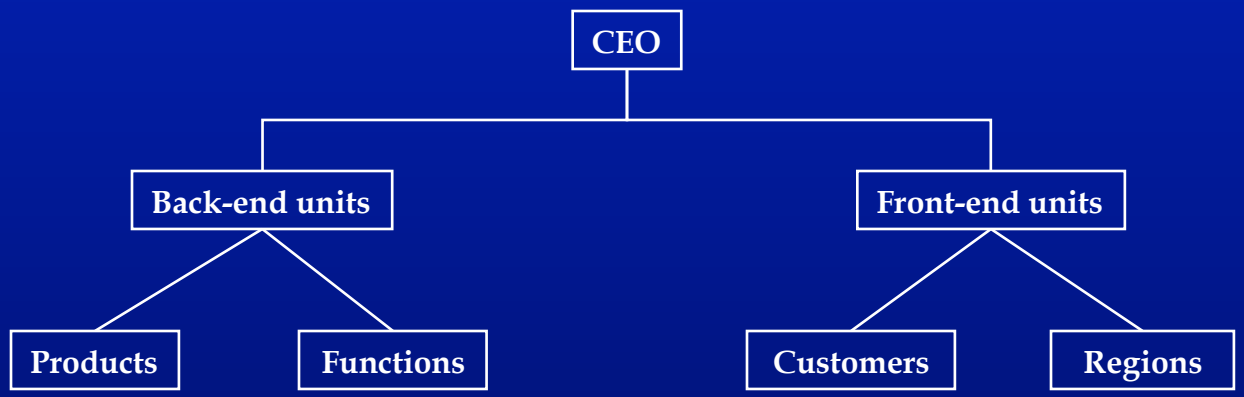
Product Organization

Matrix Organization



How can activities be grouped? (cont.)

Front-Back Organization



When are different groupings useful?

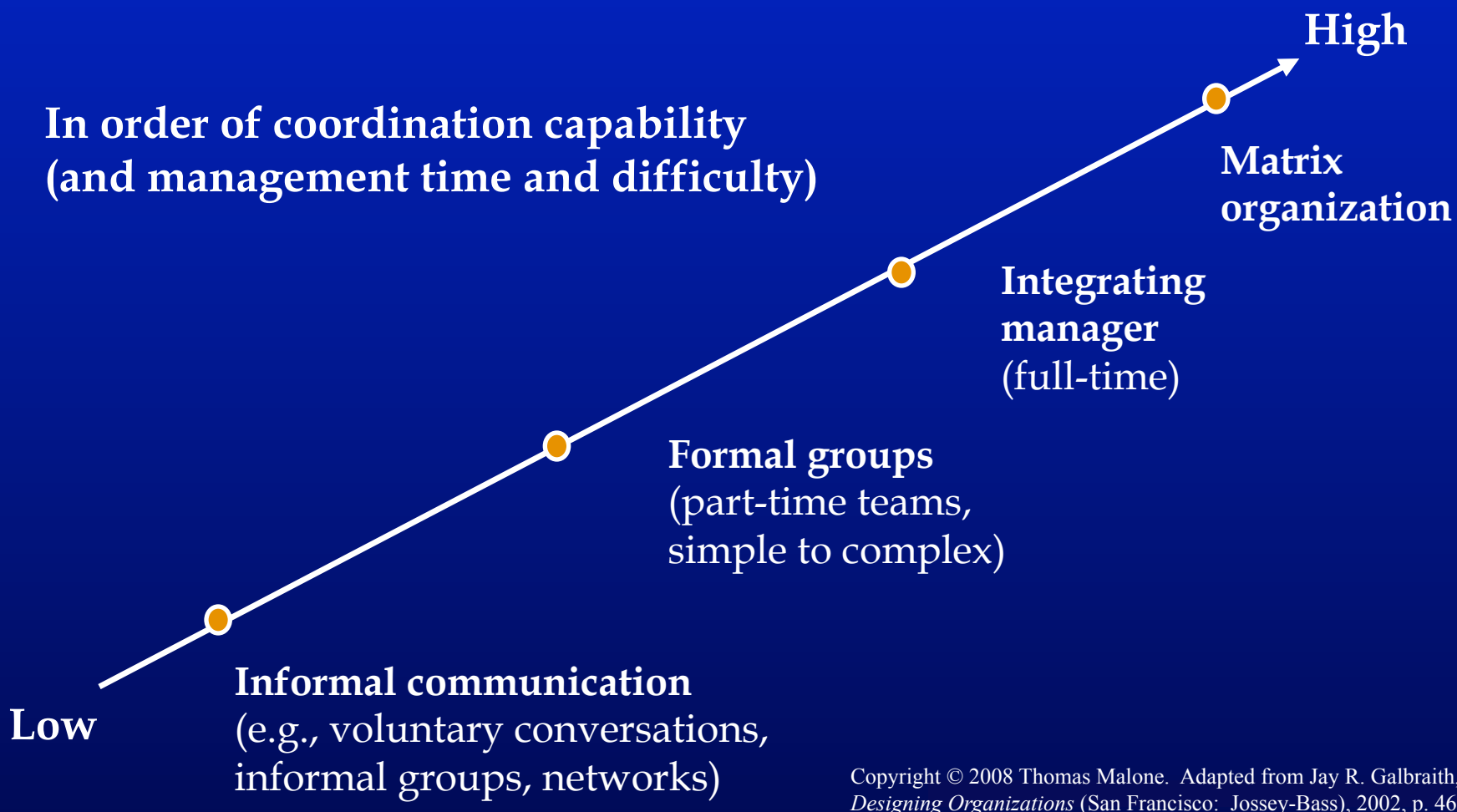
Structure	Strengths	Weaknesses
Functional	Economies of scale within functional departments In-depth knowledge and skill development Enables organization to accomplish functional goals Best with only one or a few products	Slow response time to environmental changes. Less innovation May cause decisions to pile on top, hierarchy overload Poor horizontal coordination among departments Restricted view of organizational goals
Divisional (Product, Geography, Customer, Market)	Suited to fast change and innovation in unstable environment Higher client satisfaction because product responsibility and contact points are clear Easier to adapt to differences in products, regions, clients Decentralizes decision-making	Eliminates economies of scale in functional departments Duplication of resources and poor coordination across divisions Less in-depth competence and technical specialization Integration and standardization across divisions (products, regions, etc.) more difficult
Matrix	Achieves coordination to meet dual demands Flexible sharing of human resources across divisions Suited to complex decisions and rapidly changing environments Opportunity for both functional and divisional skill development	Dual authority can be frustrating and confusing Participants need good interpersonal skills and extensive training Time-consuming: frequent meetings and conflict resolution sessions Requires great effort to maintain power balance

 Adapted from Robert Duncan, "What is the right organizational structure? Decision tree analysis provides the answer," *Organizational Dynamics* (Winter 1979), p. 429; and Richard L. Daft, *Essentials of Organization Theory & Design* (Cincinatti, OH: South-Western), 2001, pp. 42-47.

When are different groupings useful? (cont.)

Structure	Strengths	Weaknesses
Front-Back	An alternative way (in addition to Matrix) to optimize on multiple dimensions at once (e.g., products, functions, customers, regions) Often suited to large, complex organizations	Very complex to manage (needs top-down management from CEO and Executive Committee combined with lateral coordination throughout organization)

How can different groups be linked? (lateral coordination processes)



How?

Hierarchical reporting relationship

	Unitary		***Dual***
Grouping *(How are units grouped in hierarchy?)*	Functional		Matrix
	Divisional		
Linking *(How are groups linked?)*	Informal communi-cation	Formal groups (part-time)	Integrating manager (full-time)

How are things changing?

- New technologies are decreasing the costs and increasing the desirability of organizations where
  - more people make more decisions (freedom)
  - activities are more distributed geographically (globalization)
  - Intangible needs are more important (non-economic)
- What will these organizations look like?

What is collective intelligence?

Collective intelligence –

Groups of individuals doing things collectively that seem intelligent

New examples of collective intelligence

- Google
- Wikipedia
- eBay
- InnoCentive
- Digg
- YouTube
- …

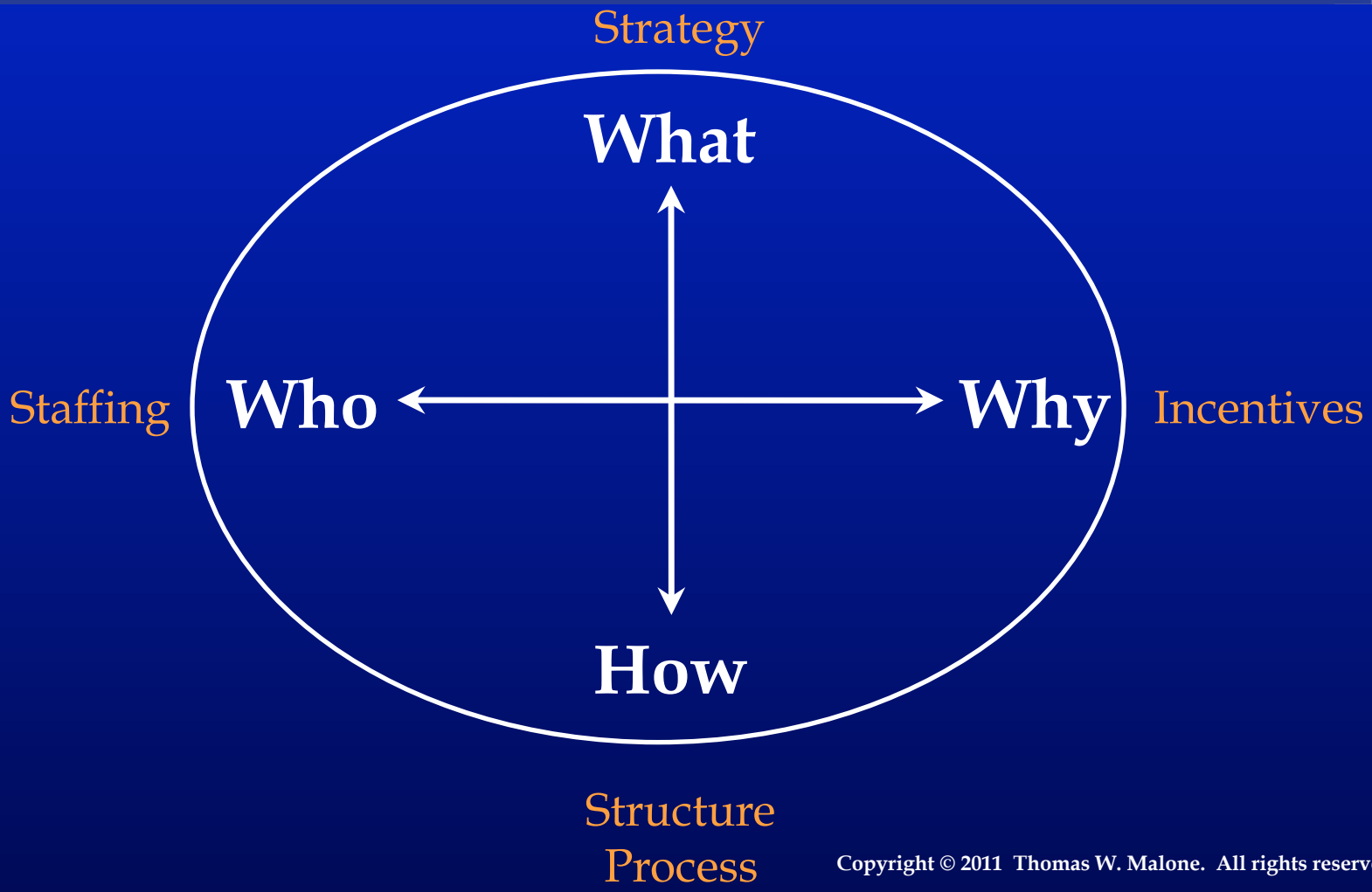
The Question

How can people and computers
be connected so that
—collectively—
they act more intelligently
than any person, group, or computer
has ever done before?

Mapping collective intelligence "genomes"

- Different types of collective intelligence embody different design patterns.
- Let's call these design patterns "genes."
- For each gene (and common combinations), we can map:
  - Examples
  - Situations where useful
  - Limitations
  - …

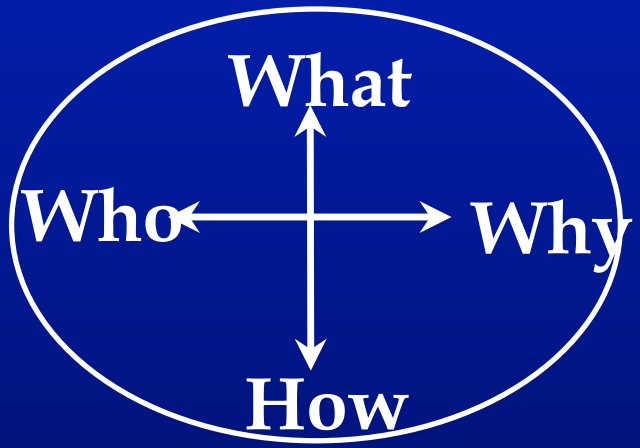
Every activity must have genes to answer four questions



Types of organizational genes

Create
Decide

Crowd	Hierarchy



- Money
- Glory
- Love

	Crowd	
	Independent	Dependent
Create	Collection	Collaboration
Decide	Individual decisions	Group decision

How?

	Crowd	
	Independent	**Dependent**
Create	Collection • Contest	Collaboration
Decide	Individual decisions • Market • Social network	Group decision • Voting • Consensus • Other

When are different genes useful?

Question	*Gene*	*When useful*
Who	**Crowd**	· Resources useful in doing activities are distributed widely or in places not known in advance · Activities can be divided into pieces satisfactorily (necessary information can be shared; gaming and sabotage can be managed) · Crowds can do things cheaper, faster, with higher quality, or with higher motivation
	Hierarchy (or, Management)	Conditions for crowd aren't met
Why	**Money** **Love** **Glory**	Many factors, too complex to list here, are relevant, with two rules of thumb – Appealing to Love and Glory, rather than Money, can often (but not always) reduce costs – Providing Money and Glory can often (but not always) influence a group's direction and speed.
How—Create	**Collection**	Conditions for Crowd, plus… ·Activity can be divided into small pieces that can be done (mostly) independently of each other.
	Contest	· Conditions for Collection, *plus*… · Only one (or a few) good solutions are needed.
	Collaboration	· Activity *cannot* be divided into small independent pieces (otherwise Collection would be better) · There are satisfactory ways of managing the dependencies among the pieces

When are different genes useful? (cont.)

Question	*Gene*	*When useful*
How—Decide	**Group Decision**	• Conditions for Crowd • Everyone in the group needs to abide by the same decision, *plus* …
	Voting	· It is important for the Crowd to be committed to the decision
	Averaging	· Conditions for Voting, *plus*… · Decision consists of estimating a number · Crowd has no systematic bias about estimating the number
	Consensus	· Conditions for Voting, *plus*… · Achieving consensus in reasonable time is feasible (group is small enough or has similar enough views)
	Prediction market	· Decision consists of estimating a number · Crowd has some information about estimating the number (biases and non-independent information are okay) · Some people may have (or obtain) much better information than others · Continuously updated estimates are useful
	Individual Decisions	• Conditions for Crowd • Different people can make their own decision, *plus* …
	Market	· Money is needed to motivate people to provide the necessary effort or other resources
	Social network	· Non-monetary motivations are sufficient for people to provide the necessary effort or other resources · Individuals find information about other's opinions useful in making their own choices.

Summary

- Just as there are *patterns* for designing hierarchical organizations, there are also patterns for designing crowd-based organizations.
- Mapping the "genes" for four basic questions—Who, Why, What, and How—can help understand these patterns and when to use them.
- And this, in turn, can help you take advantage of the new organizational possibilities enabled by information technology.

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