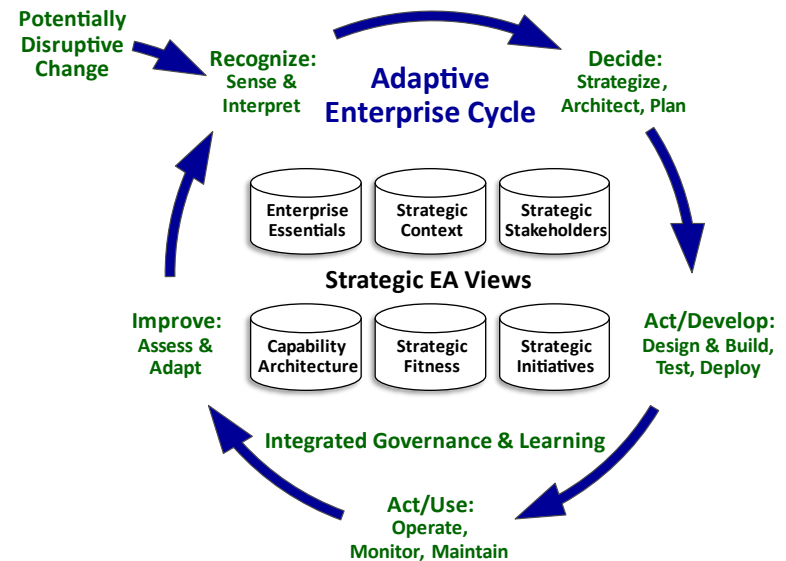


THE STRATEGIC ENTERPRISE ARCHITECT'S DILEMMA

Balancing
Fitness for Today's Purpose
with
Fitness for Tomorrow's Context
Disruptive



Alex Conn and Leo Laverdure

Agenda

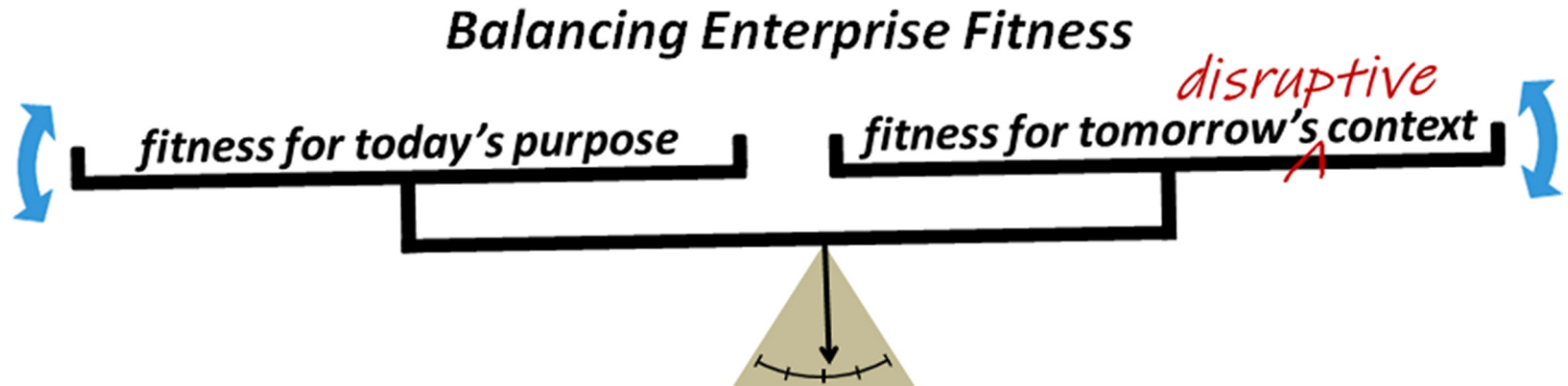
1. The Dilemma:
*Balancing Fitness for Today's Purpose With Fitness for Tomorrow's **Disruptive** Context*
2. What “fitness for context” entails
3. The Adaptive Enterprise Cycle methodology and views, along with key tools
4. The discipline of Strategic Enterprise Architecture
5. Example Use of the Adaptive Enterprise Cycle Methodology: Generative AI as a Disruption

Overview: Challenge, Dilemma, and Solution

Challenge

Today's enterprise context: **pervasive, unrelenting, and disruptive change**
Remaining **fit** for the changing context is critical
Reviewing **purpose** to keep it relevant is also key

Dilemma



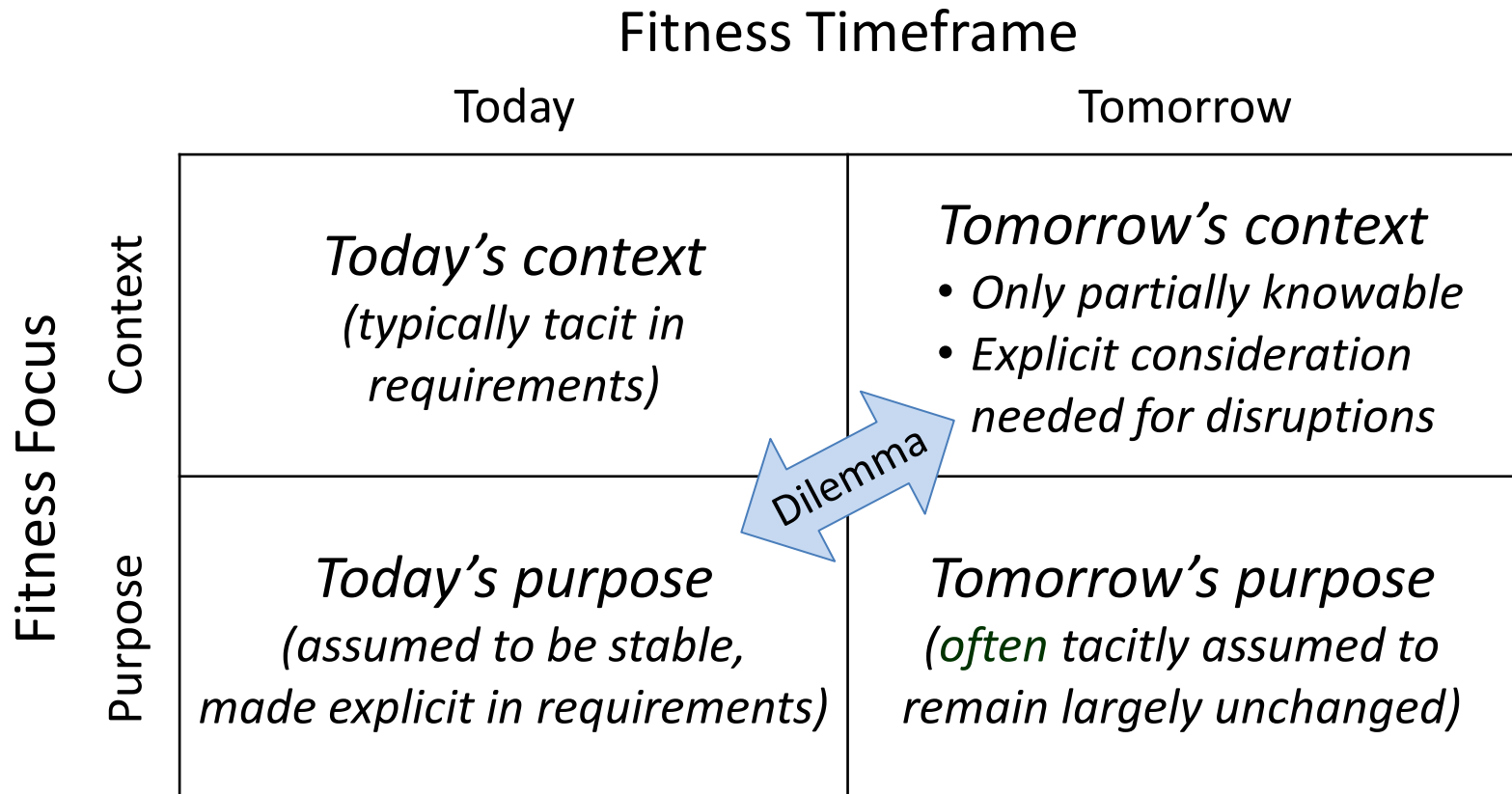
Solution

Strategic Enterprise Architecture (Strategic EA) with its three components:

1. **The Discipline**
2. **The Views:** six core views supporting **Strategic Fitness**
3. **The Methodology:** the **Adaptive Enterprise Cycle**, methods, and tools

Strategic EA Focus and Time-Frame Dilemma:

Fitness for Today's Purpose
versus
Fitness for Tomorrow's *Disruptive* Context



Five Key Challenges that Inform the Dilemma

Key Challenge	Challenge Factors	Dilemma Impact
Complexity	Large number of parts, players, interactions; emergent behavior	Much harder to know where to focus and to understand what's happening
Uncertainty	Limited, unreliable information about current & future state of things; some things inherently unpredictable	Much harder to be sure about what will happen and what to do about it. Increases need for ongoing monitoring, analysis, and preparedness.
Unfamiliarity with Disruptive Change	Too much focus on short-term concerns limits ability to understand future needs	Harder to imagine and plan for range of plausible disruptions. Need to focus on high risk/high reward eventualities.
Resistance to Change	Inertia of predominant mental models; unintended consequences of new policies	Hard to change entrenched culture and craft effective solutions. Need to engage all stakeholders to realize change.
Enterprise Architecture Team Constraints	Demands on limited EA team resources; insufficient access to strategic information; limited role in strategy formation	Harder to make valuable contributions to the enterprise's strategic direction, strategic issue resolution, and future readiness

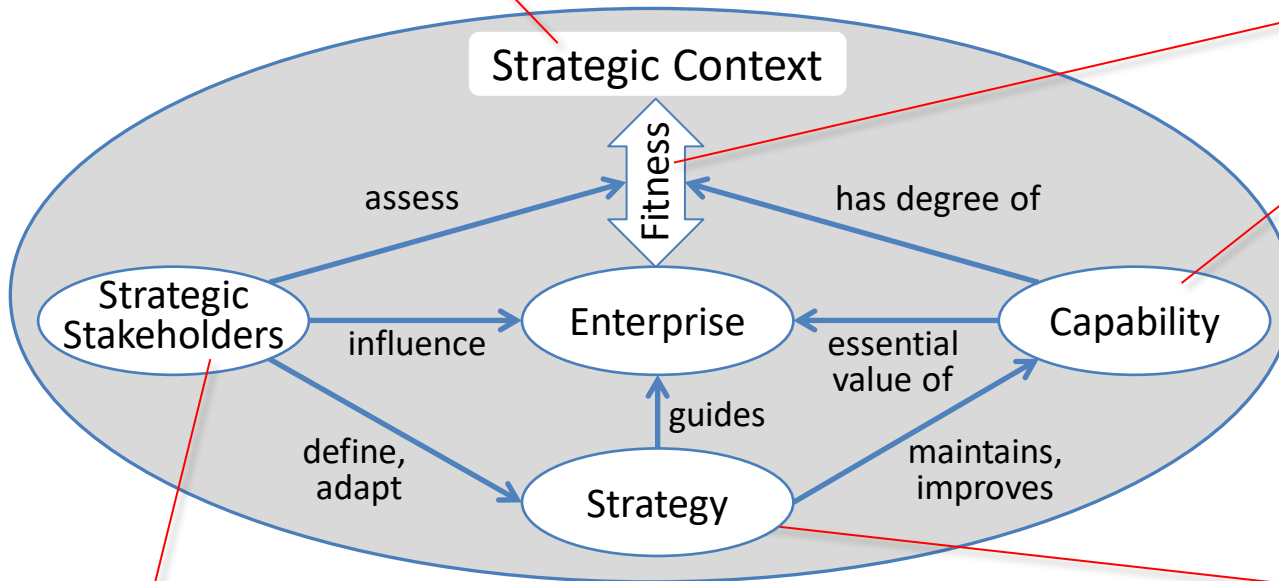
Basic Concepts and Relationships for Enterprise Fitness

Strategic Context

The key current and future conditions within the **Enterprise** and its environment

Fitness

The ability of the **Enterprise** to survive and thrive in its environment



Capability

The overall ability of the **Enterprise** to deliver on its unique value and vision

- Requires ongoing adaptation to maintain **Fitness** in a changing **Strategic Context**

Strategic Stakeholders

Any party having a say in creating or revising Enterprise Essentials, especially the Strategy and overall Capability

- Assess the degree of **Fitness** of the **Enterprise** within the **Strategic Context**
- Adapt the **Strategy** to maintain and improve the **Fitness**

Strategy

A high-level plan to achieve one or more goals under conditions of uncertainty

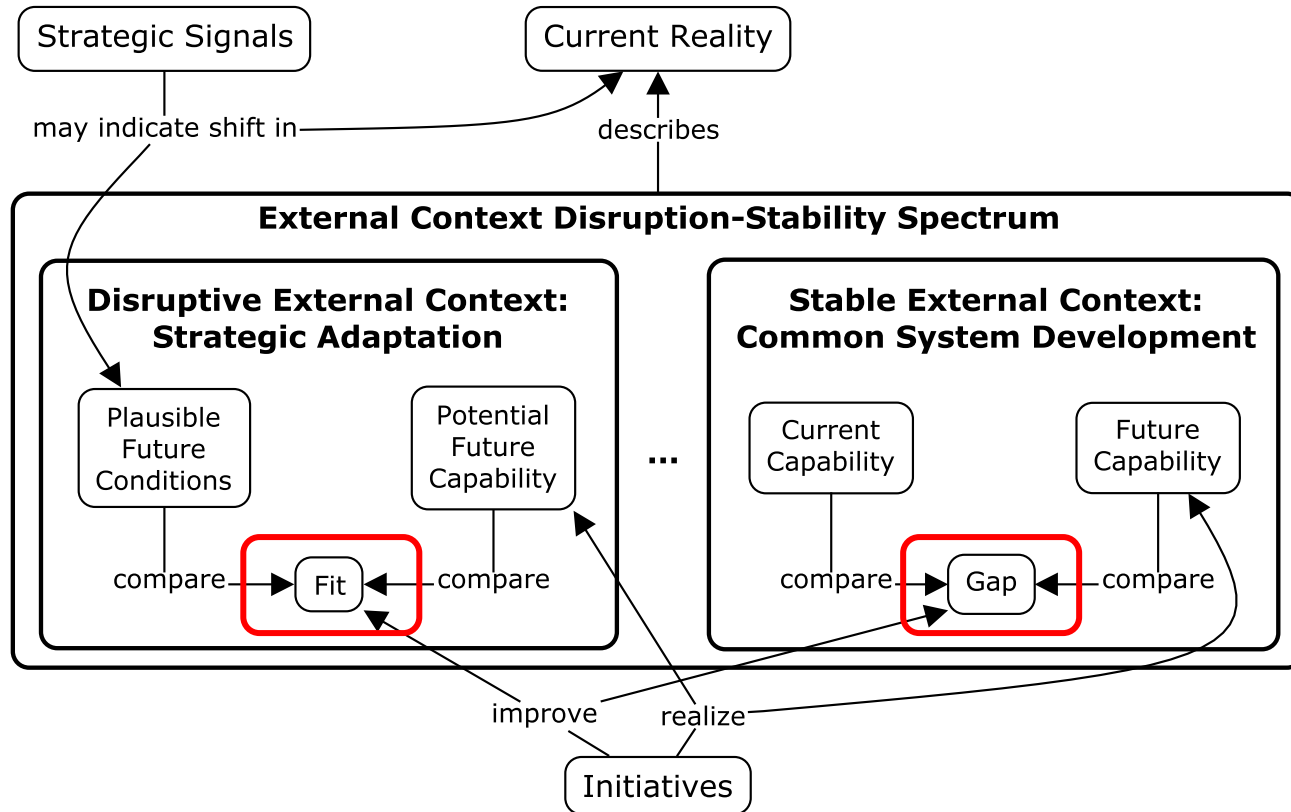
- Realized by investments funding strategic initiatives

Ways of Thinking About Fitness

There are (at least) four key ways to think about fitness:

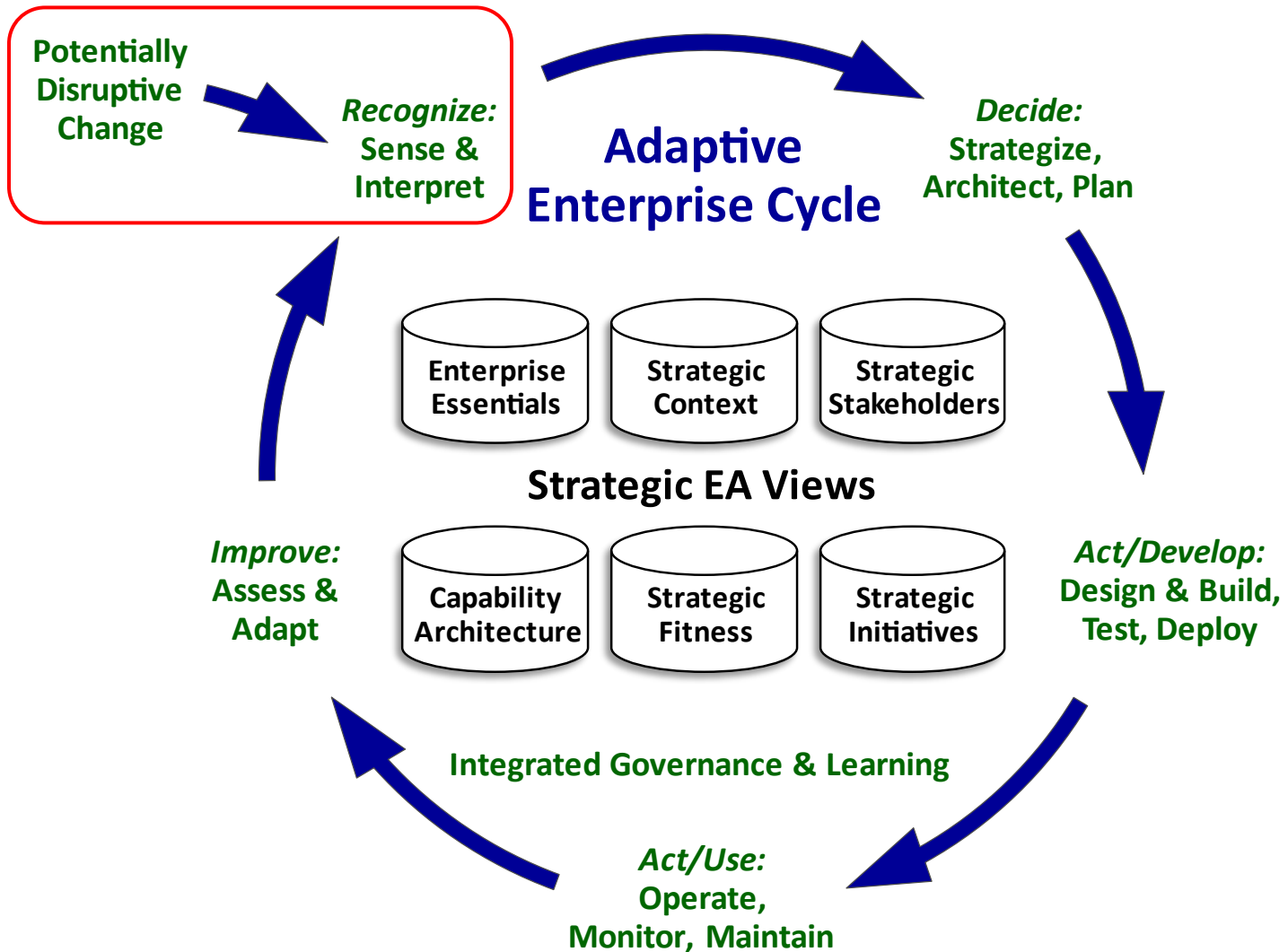
1. Fitness for purpose (current and planned operations)—similar to health and wellness
 - Tends to overemphasize just-in-time availability of resources at the expense of just-in-case safety/security
2. Fitness for the current context—addresses needed capabilities and anticipatable interruptions
 - Emphasizes flexibility and resilience, including business continuity
3. Fitness for plausible future contexts--anticipates consequences of long-term trends and disruptions
 - Emphasizes adaptability, including situational awareness and the ability to address a broad range of potential developments
4. Fitness of the local ecosystem with respect to the long-term, greater ecosystem, maximizing “carrying capacity”
 - Emphasizes fitness beyond the enterprise, beyond industries, beyond countries or regions

Disruptive vs. Stable External Context: Fit versus Gap

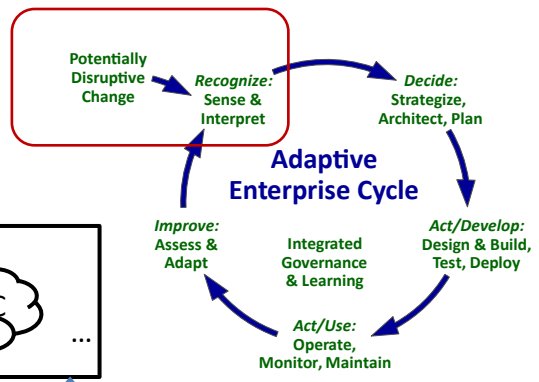


EA practice focuses on the Gap between the current and desired capability, assuming that the context is relatively stable. Strategic EA focuses on Fit, assuming that the context is relatively unstable and simple gap analysis is inadequate.

Strategic Enterprise Architecture: Methodology and Views



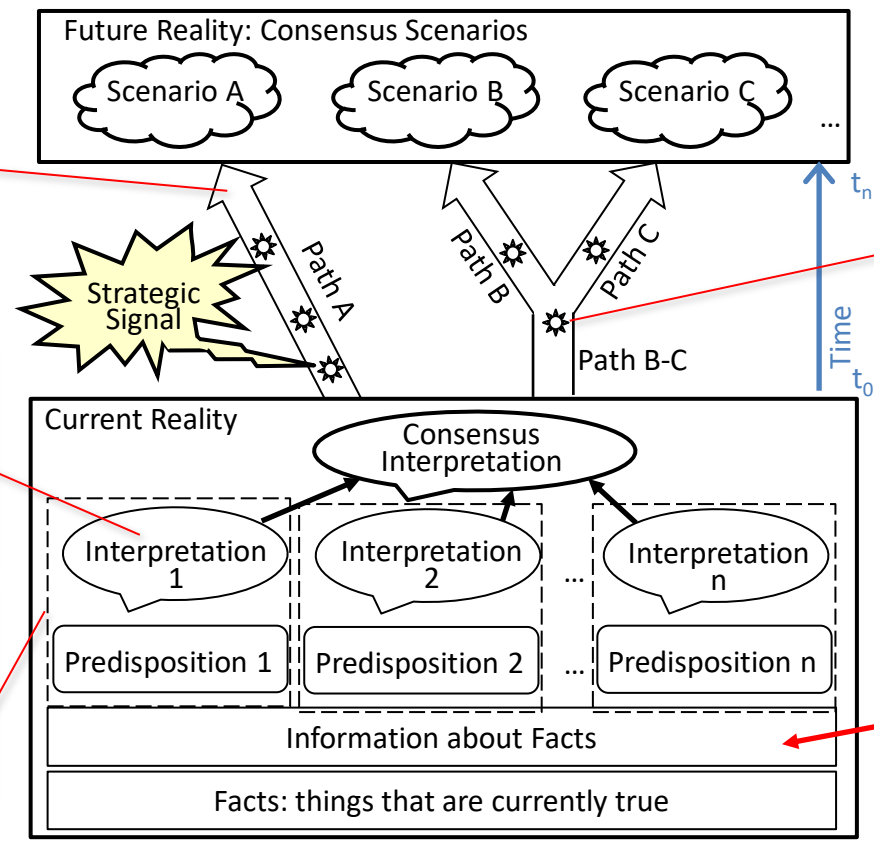
Using Scenarios and Strategic Signals to Recognize Disruptive Shifts



Scenario Path →
A sequence of events that leads from Current Reality to a plausible Scenario

Interpretation ☞
An explanation of the meaning of the Information about a set of Facts

Stakeholder Perspective ☐
Each strategic stakeholder's cognitive processing of Current Reality

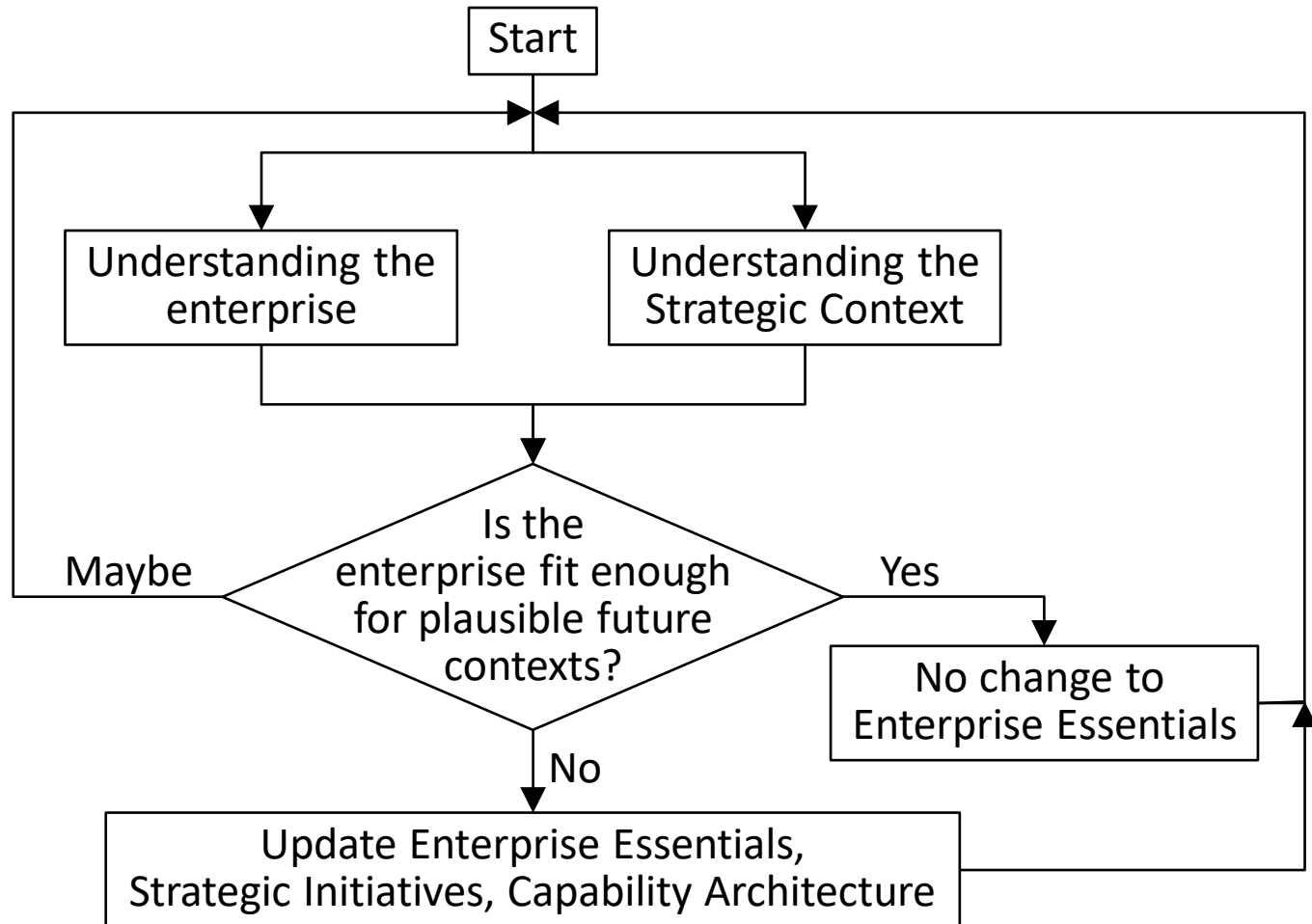


Path Point ☼
A point in a Scenario Path indicating progress toward one or more Scenarios. Branching may occur at some points.

May be:
true, false, uncertain;
partial, complete;
objective, subjective;
welcome, unwelcome;
...

Strategic planning starts with creating a Consensus Interpretation of the Current Reality. Then planners create a small set of plausible future Scenarios that differ from each other in some essential way(s). They next define Paths to each Scenario and monitor Strategic Signals that indicate progress along or changes in the Paths, adjusting as needed.

Fit Between Strategic Context and Enterprise Essentials (Essence of Strategy Development)

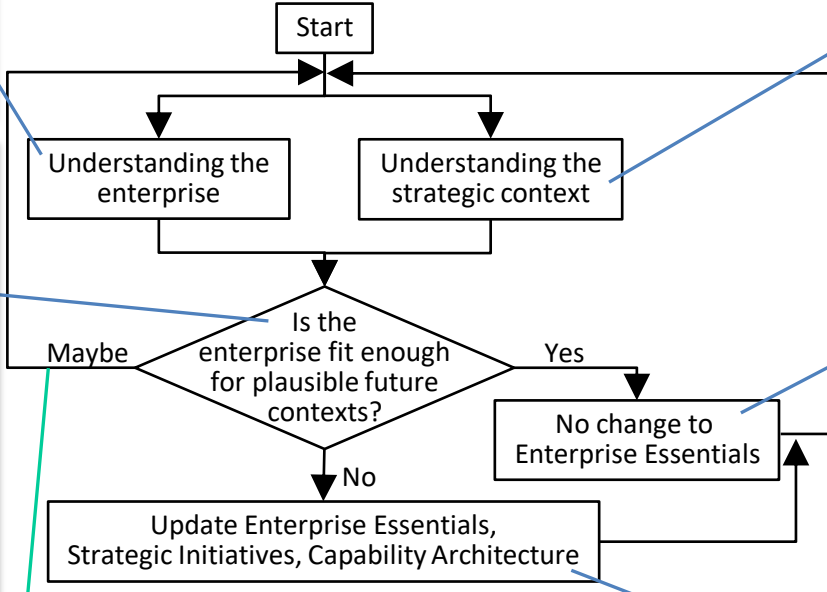


Fit Between Strategic Context and Enterprise Essentials: Key Questions Checklist

- Are the Enterprise Essentials reviewed and documented?
- Is our level of understanding good enough? Any gaps?
- Is improving understanding an ongoing activity?

- Are we making the right enterprise fitness trade-offs given:
 - scenarios covering plausible future contexts
 - the uncertainty of predictions
 - desired initiatives & results
 - the availability of resources?
- Is the decision realistic based on how our enterprise behaves today (e.g., cost/benefit)?
- Do we have a well-defined method for evaluating fit? For determining what's plausible?
- Are we considering multiple future timeframes?
- Have we defined a stopping rule for good-enough fitness?

Enterprise Essentials:
Purpose, Unique Value & Vision, Capability, Business Model, Culture, Strategy



What steps can we take to improve our understanding?

Strategic Context:
Conditions; Limits & Constraints; Trends, Disruptions, Shifts

- Are we considering all of the relevant context? Is it reviewed and documented?
- Are we looking at the context from all customer/stakeholder perspectives?
- Is our level of understanding good enough? Any gaps?
- Is improving understanding an ongoing activity?

- Even if the Enterprise Essentials don't change, are R&D plans, resources, and progress good enough?

- Is the path forward clear? Have we agreed upon a success model?
- Are resources adequate to realize identified improvements?
- Are we on a path to make fitness improvements operational?

Some Examples of Disruptions in Each PESTLER Strategic Factor Category

Category	Examples
Political	State actor cyber-attacks, changes in trade agreements, uprisings
Economic	Moore's law trending, cost-driven modernization, work stoppages
Societal/cultural	Social networking, crowd sourcing, trends, migrations, pandemics
Technological	Modernization, work processes, information, change management
Legal/regulatory	Changing local, national, and international standards & regulations
Environment (natural)	Supply chain disruption by extreme acts of nature
Resources	Resource supply volatility causing market disruption

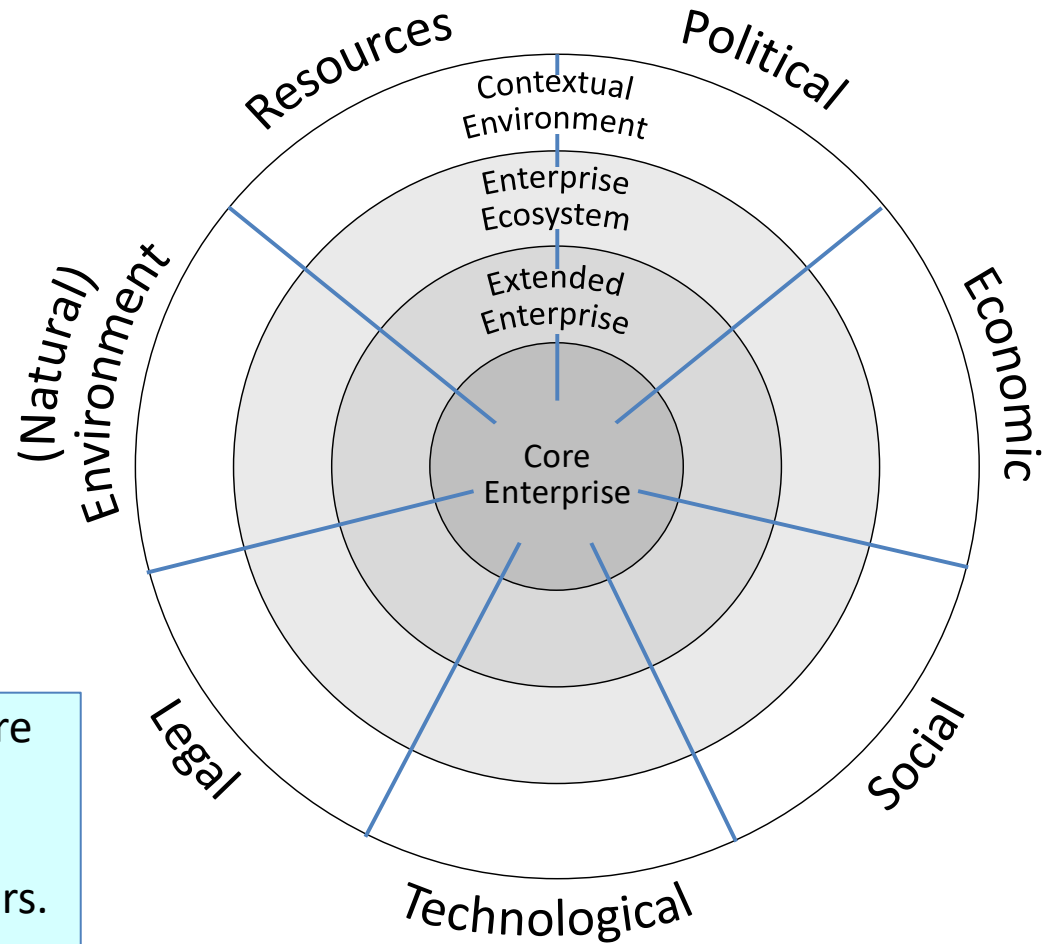
Multi-Layer Strategic Context Model

Multi-Layer Strategic Context Model

A graphical categorization of strategic factors using two dimensions:

1. Centrality to the enterprise (rings from completely external to core)
2. Type of strategic factor (PESTLER sector)

Strategic factors show up in one or more ring segments (sectors within a ring). The factors can also cascade into new segments and/or give rise to new factors. E.g., an earthquake can impact the Economic sector.



Capability Fitness: The **FUSERS** System Qualities Framework

Context
(PESTLER)

**Capability
Fitness**

Function
User/Stakeholder
Experience
Safety/Security
Economy
Responsiveness
Sustainability

- Usability, Ubiquity
- Aesthetics, Emotional Effect
- Efficiency, Performance
- Affordability
- Utility, Salability
- Smartness
- Interoperability, Integratability
- Scalability
- Integrity, Privacy, Secrecy
- Manageability, Governance
- Timeliness
- Eco-friendliness
- Reliability, Business Continuity, Availability
- Stability, Maintainability, Resilience
- Adaptability, Flexibility, Evolvability

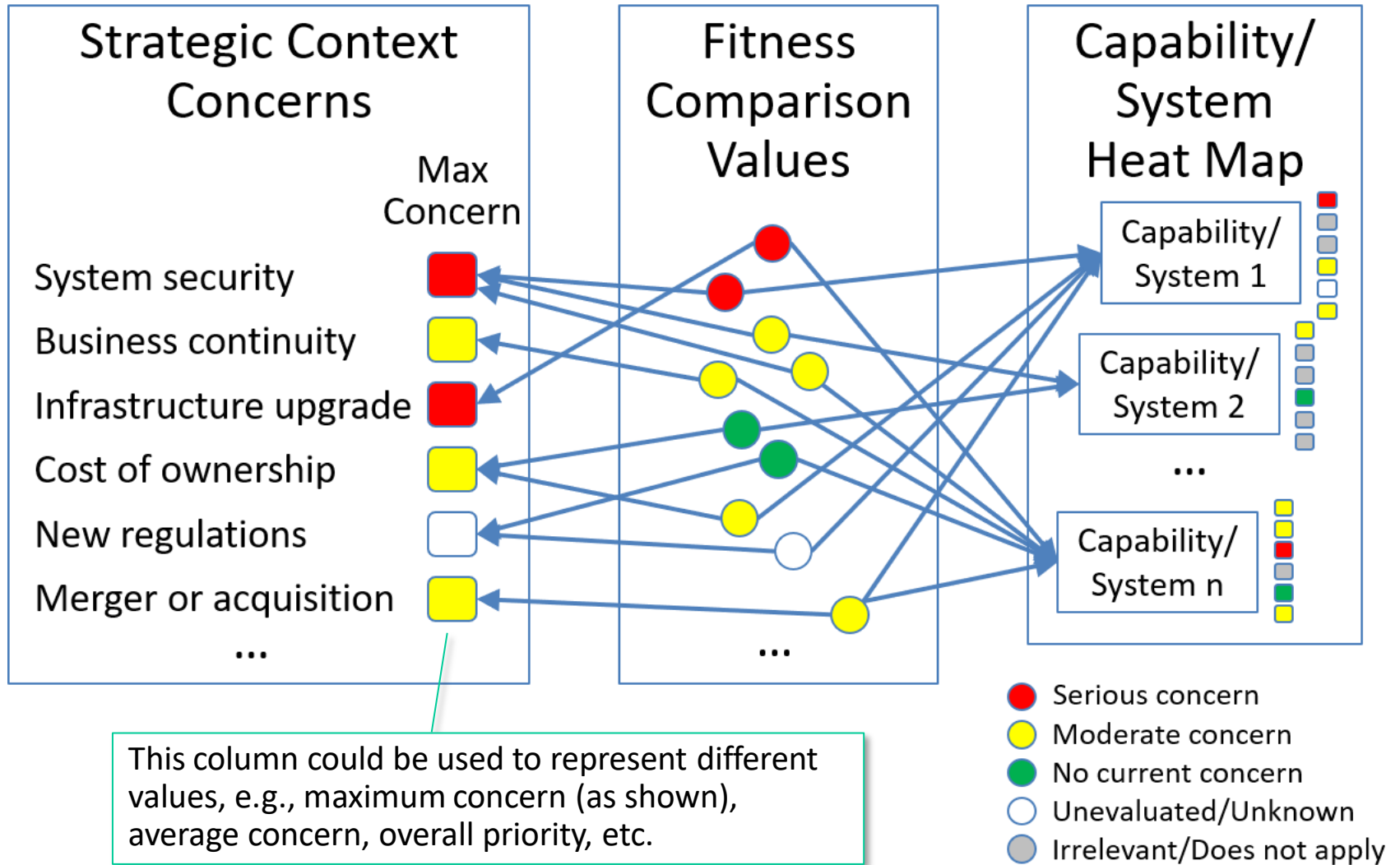
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Capability Fitness: How well the Capability provides stakeholder value within its changing context.

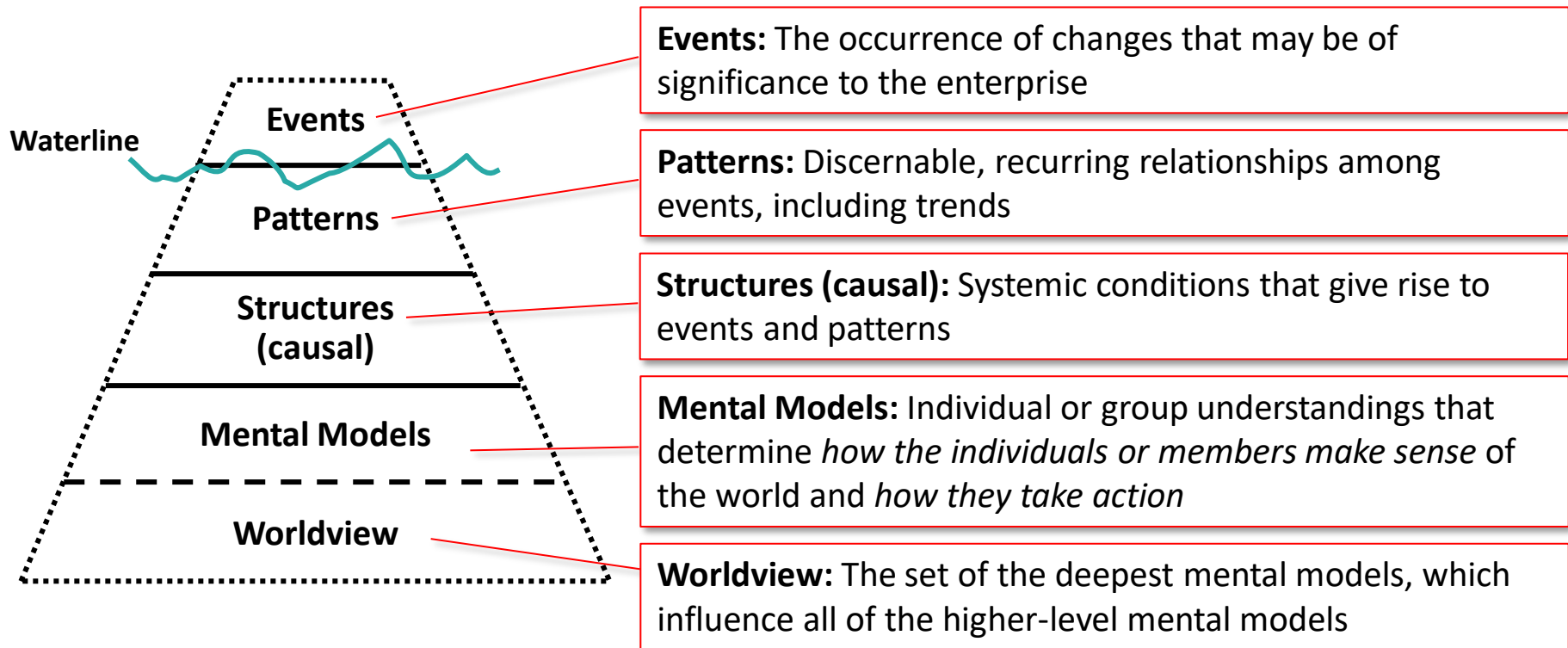
Capability Fitness is the overarching system quality.

Capability Fitness is only as good as the Fitness and Flexibility of the composite system that delivers it.

Strategic Fitness Heat Map Example



The Systems-Thinking Iceberg Model Definitions



The multiple levels of the iceberg help us understand complex systems and identify leverage points for effective interventions.

Situation Complexity Analysis and Decision-Making Summary

What is the situation? What are the issues? What to do?

Complex – Learn by trying things

- **Events:** Unknown/unfamiliar; disruptive?
- **Trends/Patterns:** Retrospectively coherent
- **Structures:** Cause-effect relationships unclear; cascading interactions
- **Mental Models:** Inadequate, discoverable
 - **Practice model:** research, experimentation; paradigm, and scenario discovery
- **Worldview:** Holistic understanding of ecosystem; willingness to experiment

Sense – Probe/experiment – Sense – Respond ③

Complicated: Figure out what to do, do it

- **Events:** Non-obvious
- **Trends/Patterns:** Clear only through analysis
- **Structures:** Cause-effect relationships less clear, predictable, repeatable
- **Mental Models:** Already there for experts
 - **Practice model:** Contextual scenarios
- **Worldview:** Big picture understanding

② *Sense – Analyze – Respond*

Chaotic – Stabilize the situation!

- **Events:** Disruptive; unclear what's going on
- **Trends/Patterns:** Incoherent
- **Structures:** Cause-effect relationships not perceivable
- **Mental Models:** May be undiscoverable
 - **Practice model:** Crisis management; risk management; re-strategize, rearchitect
- **Worldview:** Inadequate; all hands on deck

Sense – Act – Sense – Respond

④

①

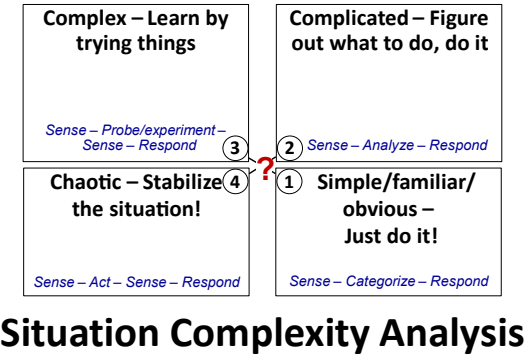
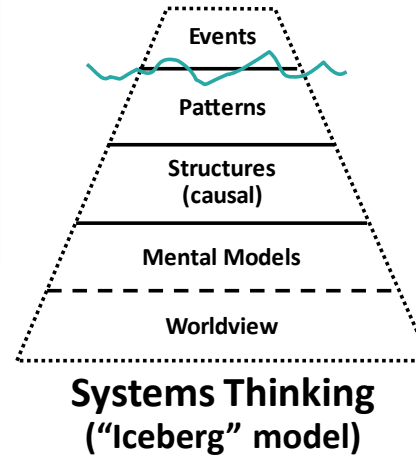
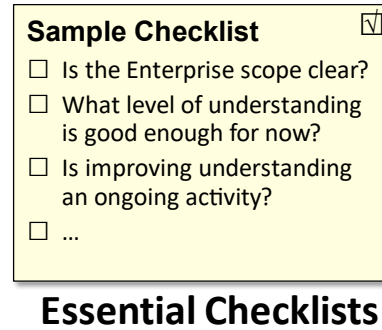
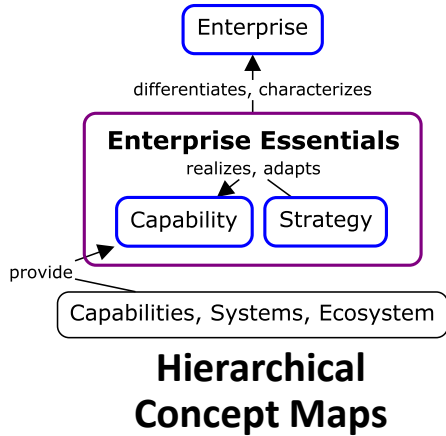
Simple/familiar/obvious/clear – Just do it!

- **Events:** Familiar, known
- **Trends/Patterns:** Relatively easy to see
- **Structures:** Cause-effect relationships perceivable, predictable, and repeatable
- **Mental Models:** Already there
 - **Practice model:** Best practice in place
- **Worldview:** Widely shared

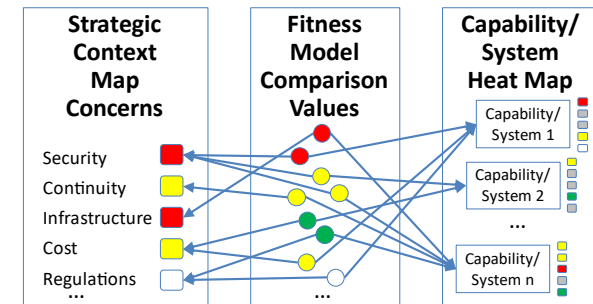
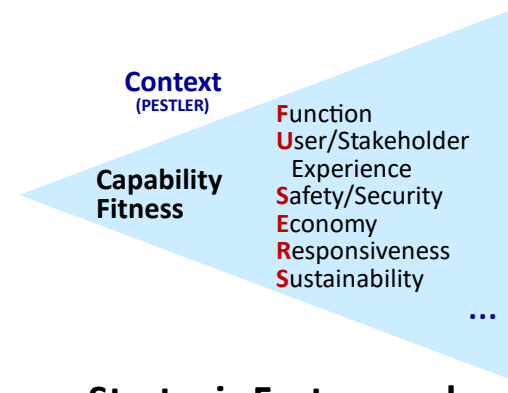
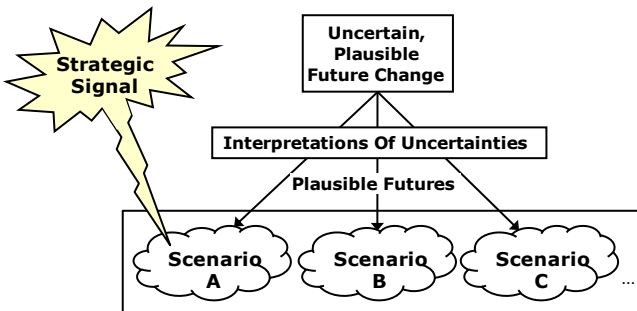
Sense – Categorize – Respond

Adaptive Enterprise Cycle: Key Tools and Methods— Graphic Summary

Key Tools



Key Methods



The Strategic Enterprise Architecture Views

Basic Concepts and Relationships for Enterprise Fitness (Recall)

Strategic Context

The key current and future conditions within the **Enterprise** and its environment

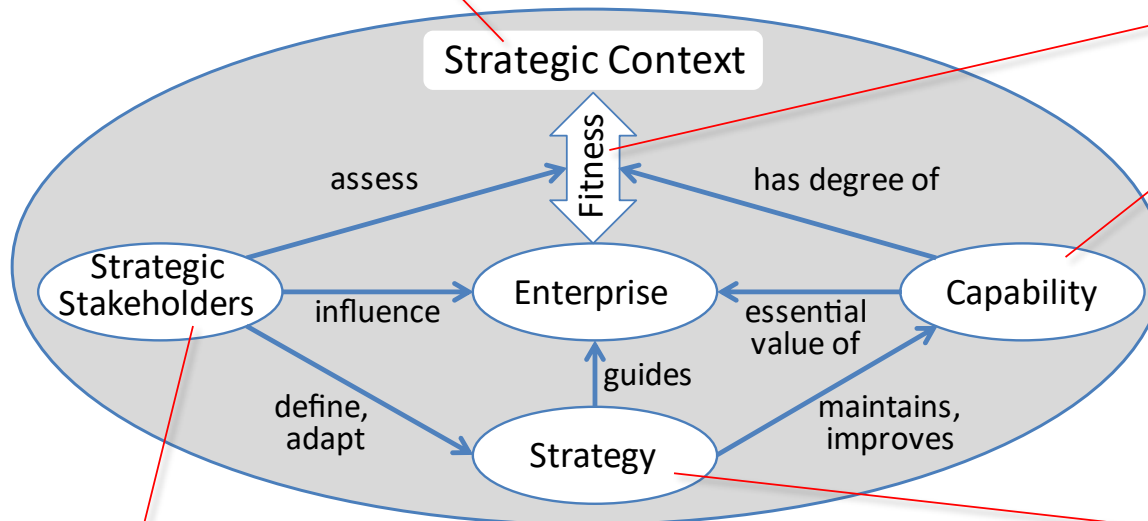
Fitness

The ability of the **Enterprise** to survive and thrive in its environment

Capability

The overall ability of the **Enterprise** to deliver on its unique value and vision

- Requires ongoing adaptation to maintain **Fitness** in a changing **Strategic Context**



Strategic Stakeholders

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- Assess the degree of **Fitness** of the **Enterprise** within the **Strategic Context**
- Adapt the **Strategy** to maintain and improve the **Fitness**

Strategy

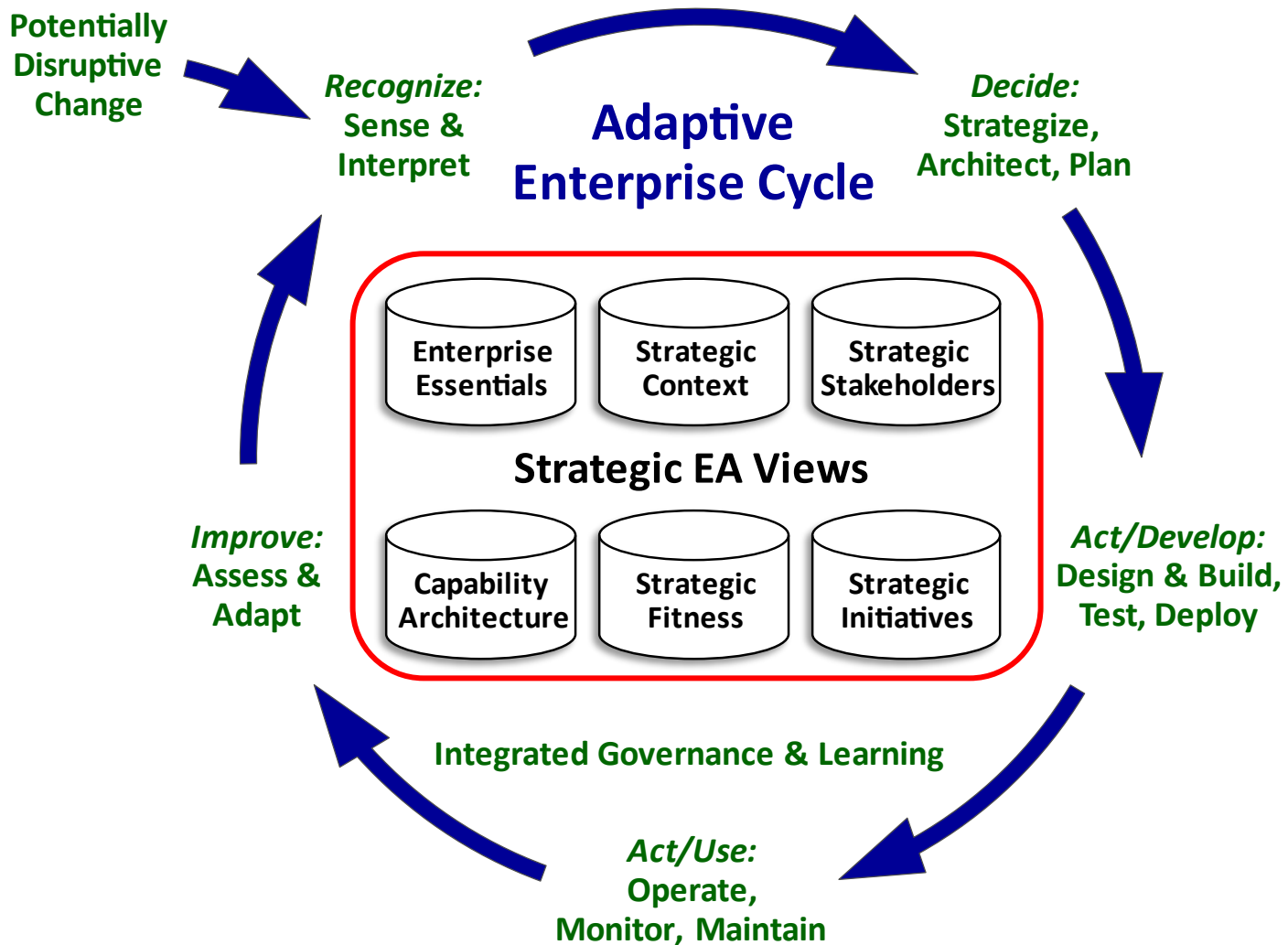
A high-level plan to achieve one or more goals under conditions of uncertainty

- Realized by investments funding strategic initiatives

Basic Fitness Concepts and Their Views

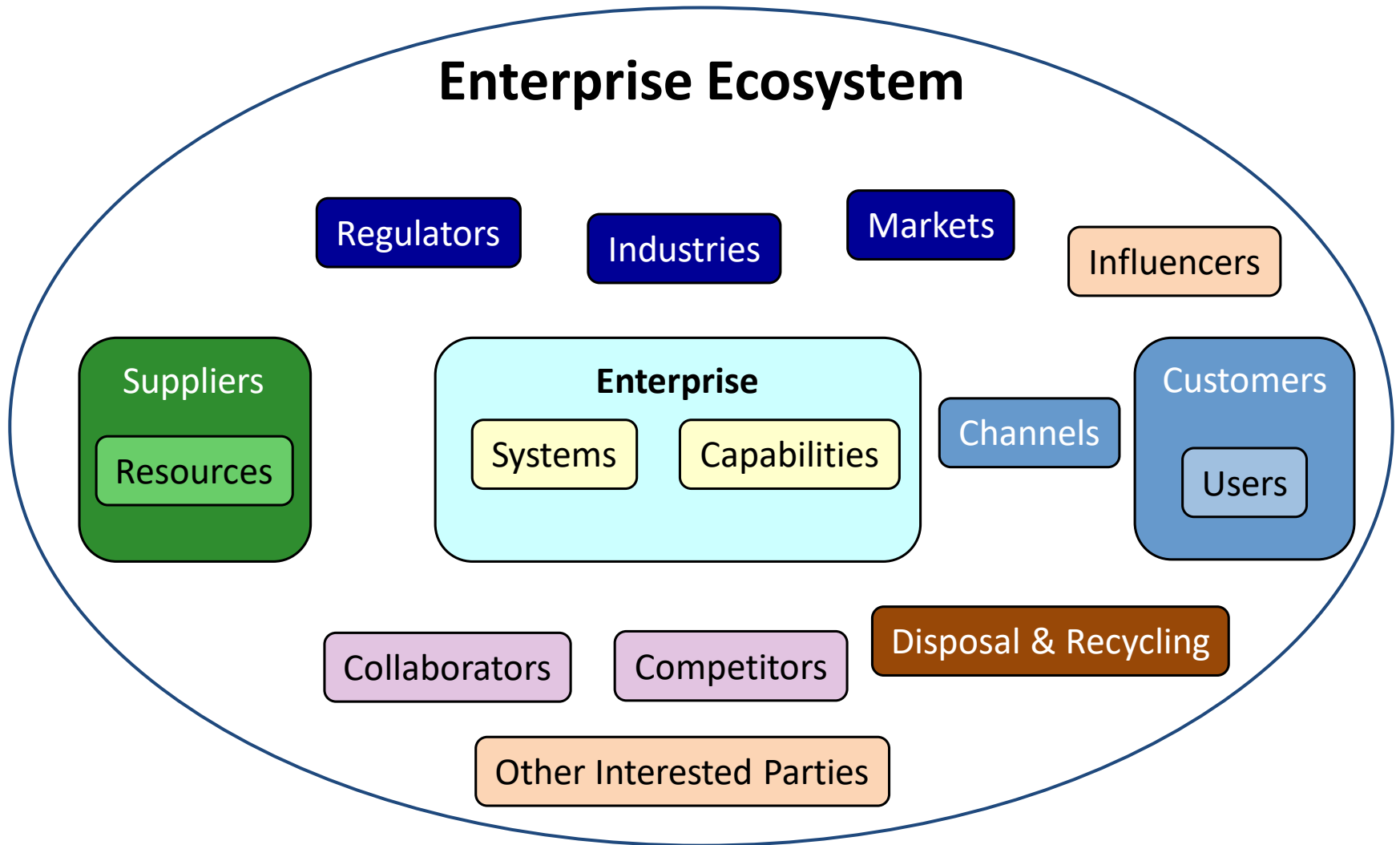
Basic Concept	Strategic Enterprise Architecture View Name	View Contents
Enterprise	Enterprise Essentials	The core, relatively stable elements of an enterprise that define its identity and distinctive character, including its purpose, unique value & vision, capability, business model, culture, and strategy
Strategic Context	Strategic Context	Conditions (trends, disruptions, shifts, signals, etc.) for different scopes (internal and external), timeframes, and strategic factors; considerations (e.g., limits and constraints), drivers, and scenarios
Strategic Stakeholders	Strategic Stakeholders	Their roles, expertise, influence, interests, concerns, needs, mental models, expectations, perceived risks, opportunities and initiatives
Capability	Capability Architecture	Models of enterprise capabilities, systems, ecosystem (current and planned), including their qualities, principles, standards, and adaptations
Fitness	Strategic Fitness	Stakeholder evaluations of the enterprise's past, current, and future ability to survive and thrive based on contextual and enterprise factors; used to update strategy, EA; shortfalls addressed by strategic Initiatives
Strategy	Strategic Initiatives	Improvement initiatives and investments for adapting the enterprise to accomplish its purpose and remain fit for context, success models, priorities and dependencies

Strategic Enterprise Architecture: Views and Methodology

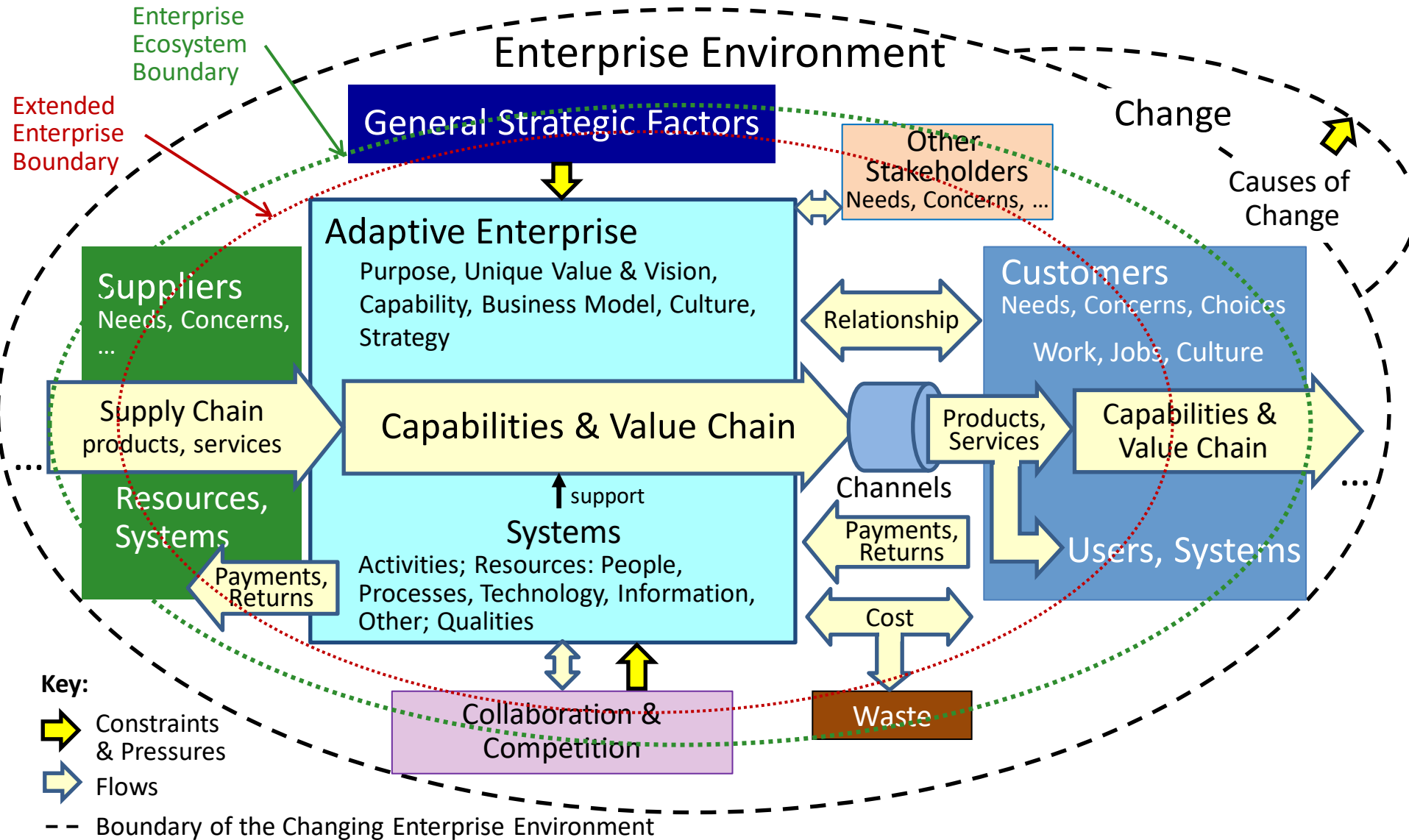


These six core views describe the enterprise and its fitness.

Capabilities and Systems Inhabit Ecosystems



The Adaptive Enterprise Model (Detailed)



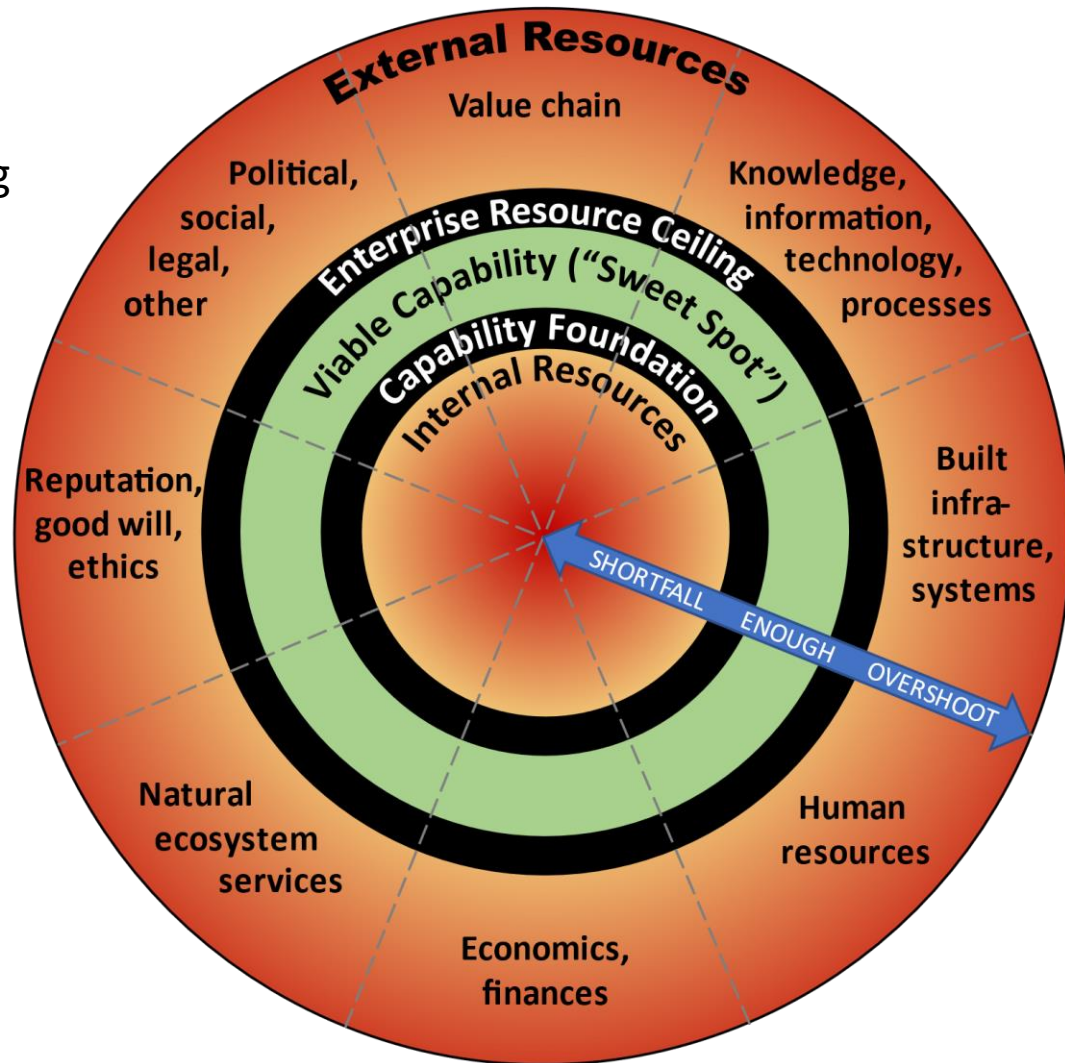
Capability and Resource Viability Model

Good enough use of resources to provide a Viable Capability over time is the fundamental strategic balancing act of all enterprises.

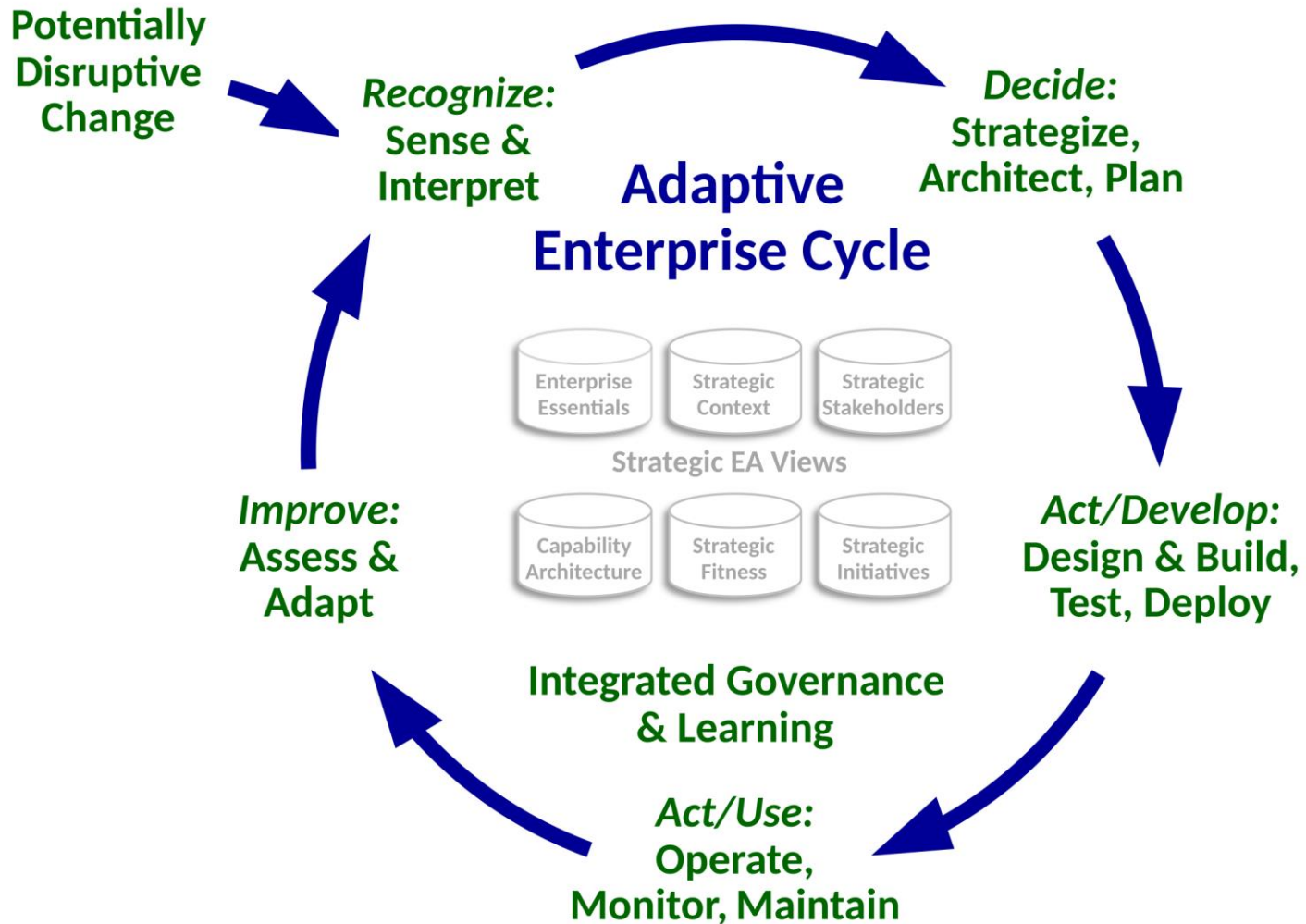
The enterprise continuously avails itself of External Resources, transforming them into Internal Resources that it uses to provide value.

If an enterprise has insufficient resources at its disposal (Shortfall), the Capability it provides will be deficient.

If it consumes too many resources (Overshoot), it will be vulnerable to disruptions, e.g., by more efficient competitive offerings.



Strategic Enterprise Architecture: Methodology and Views



The Adaptive Enterprise Cycle Methodology: *How Strategic Architecting Deals with Disruptive Change*

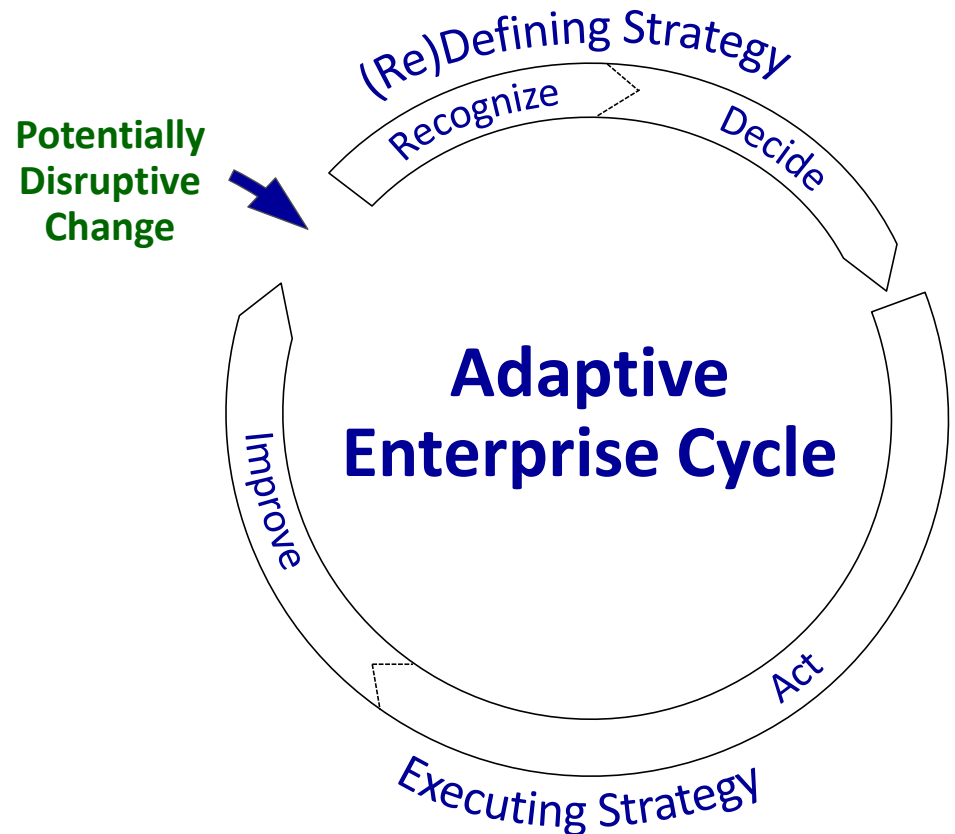
The phases of the cycle (also called the RDAI loop):

Recognize the current context and likely disruptive changes

Decide on strategic initiatives needed to address the changing context

Act to carry out the initiatives rapidly, effectively, and efficiently

Improve the accuracy of the initiatives by adapting as you learn what works

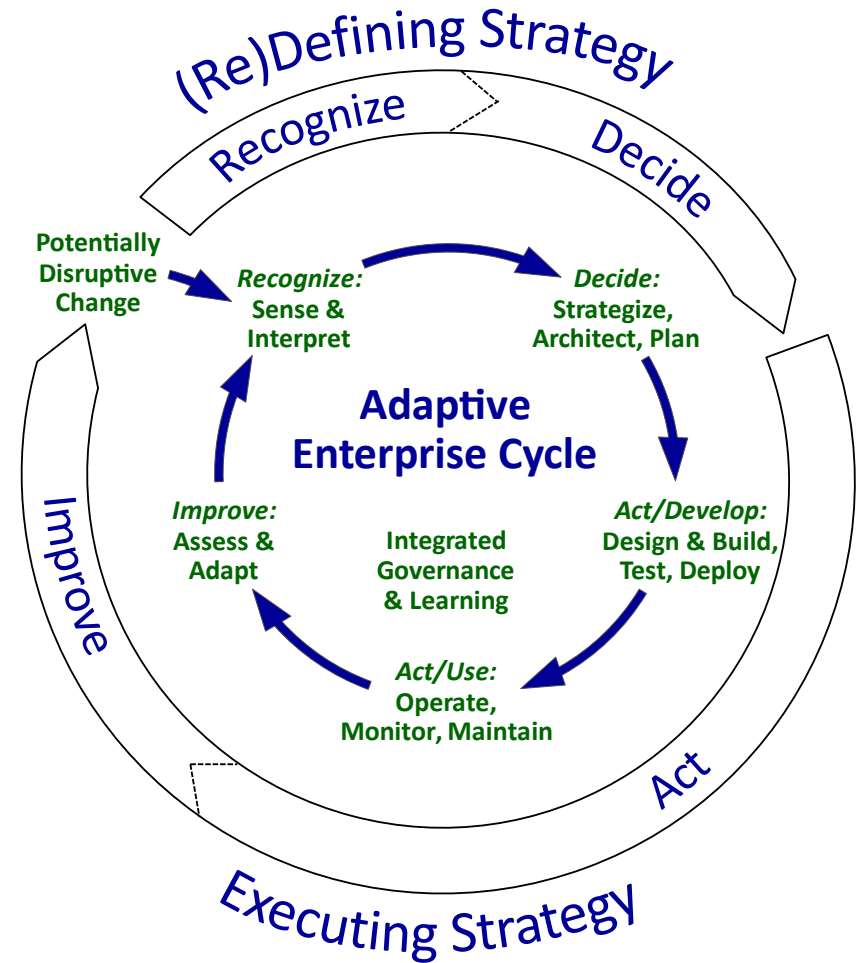


The first two phases focus on defining (and, as needed, redefining) strategy. The last two phases focus on executing strategy.

The Adaptive Enterprise Cycle with Activities

- The Adaptive Enterprise Cycle includes a number of activities aligned with the phases
- The Integrated Governance & Learning activity spans all of the phases, and all levels of management

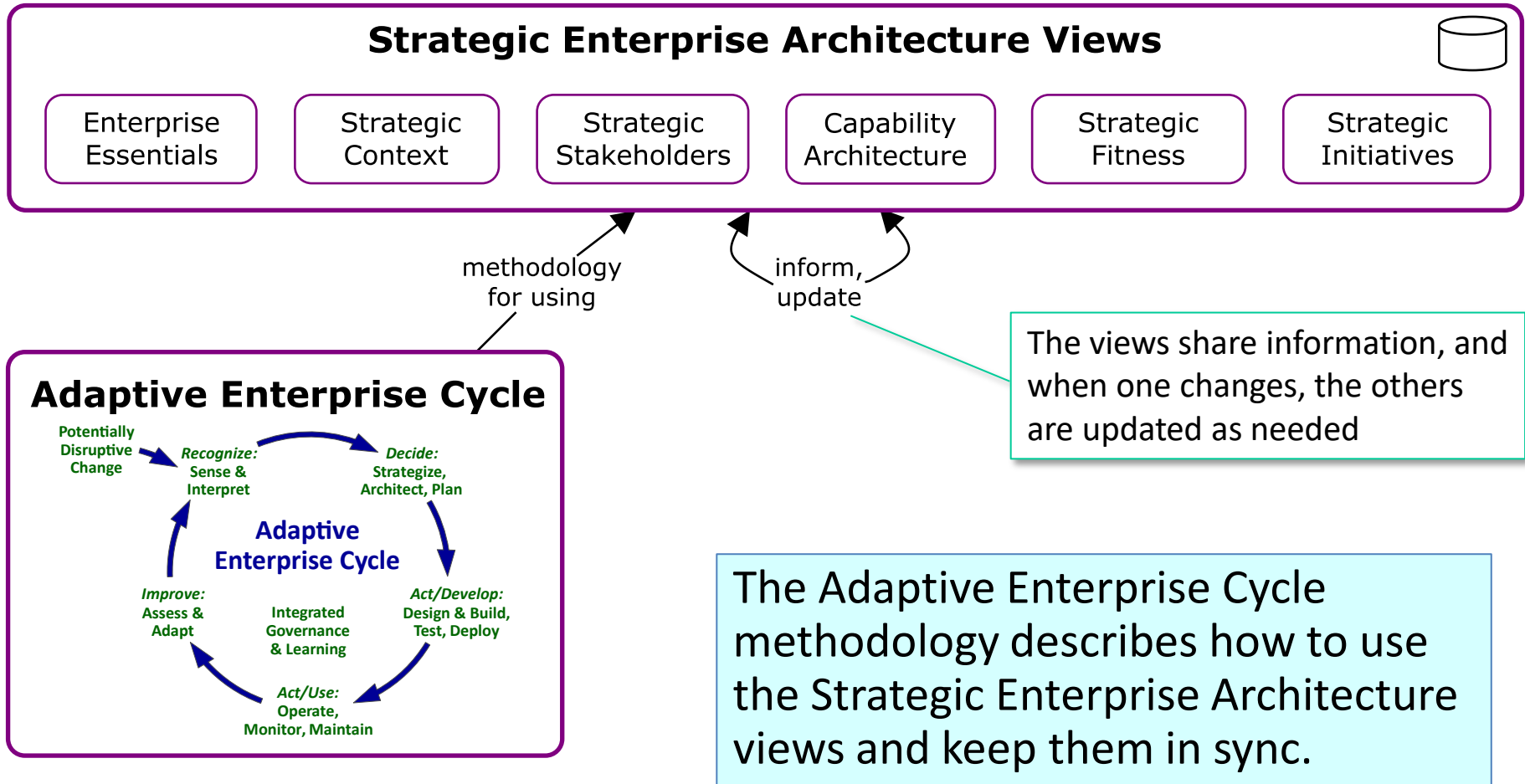
The Adaptive Enterprise Cycle addresses the continuous, iterative, and adaptive nature of Enterprise Architecting



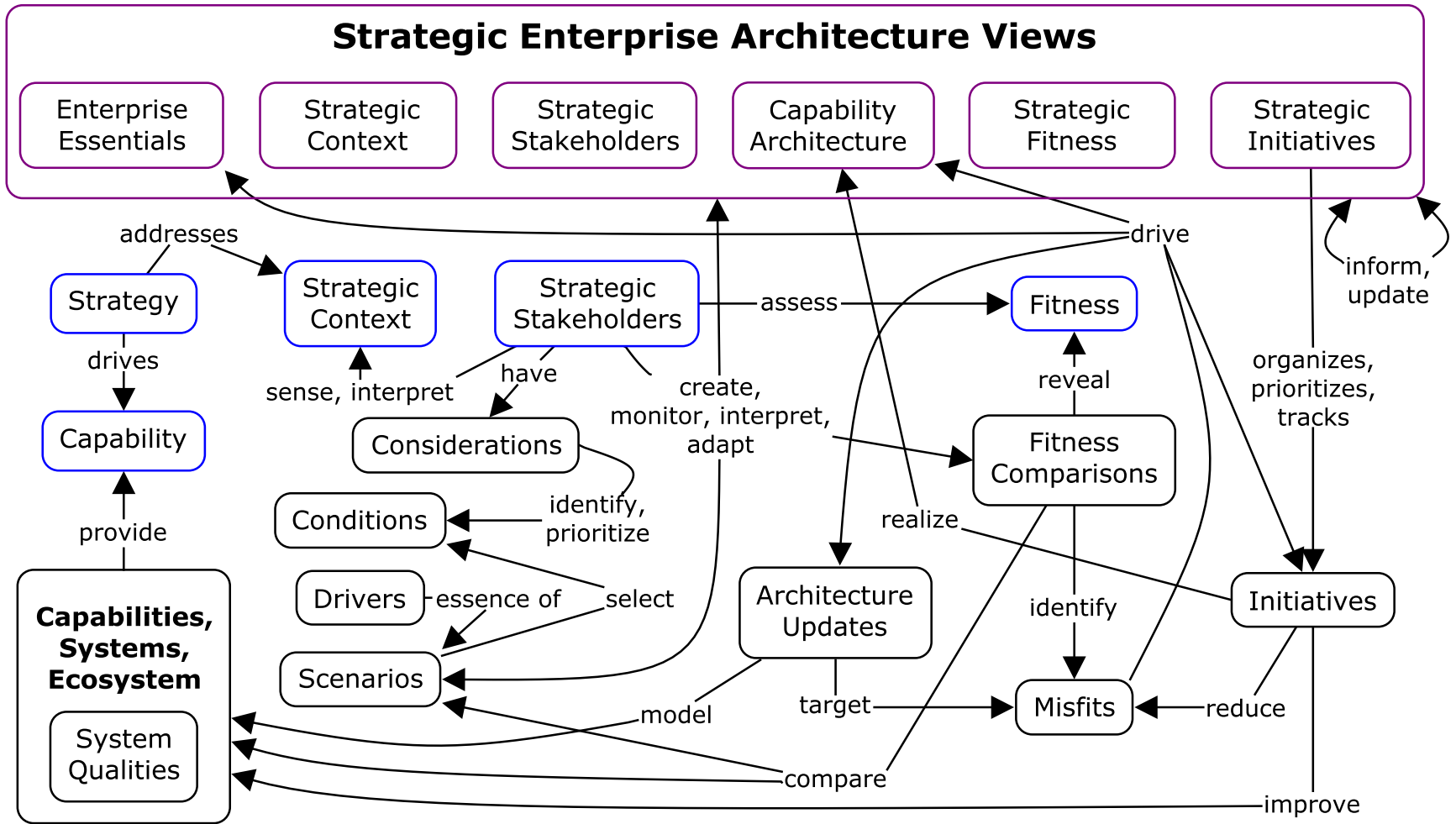
Adaptive Enterprise Cycle Phases & Activities

Str.	Phase	Activity	Description
(Re)Defining Strategy	<i>Recognize</i>	Potentially Disruptive Change	Continuously watch for changes in conditions that might signal significant threats and/or opportunities for the Enterprise
		Sense & Interpret	Become aware of and determine the relevance of the changed conditions
	<i>Decide</i>	Strategize	Identify threats & opportunities; set directions for evolving capabilities
		Architect	Define the changed capabilities & supporting systems and overall approach
		Plan	Make strategic consensus actionable; define, prioritize, fund project portfolios
Executing Strategy	<i>Act/Develop</i>	Design & Build	Refine architecture, create detailed design, implement
		Test	Verify correct system operation and capability effectiveness
		Deploy	Make the changed capabilities and supporting systems operational
	<i>Act/Use</i>	Operate	Use the changed systems
		Monitor	Observe operation of changed systems, adjusting as needed
		Maintain	Perform normal maintenance, prioritizing critical needs of capabilities
	<i>Improve</i>	Assess & Adapt	Review capability performance and fitness; adapt if needed and feasible
Both	<i>Ongoing</i>	Integrated Governance & Learning	Continuously try new ways of doing things to discover what works in the emerging context, and adjust directions, decisions, roles, responsibilities, and competencies, and update knowledge bases accordingly

Relationships Among Strategic Enterprise Architecture Views and Methodology



Strategic Enterprise Architecture Views in Context (Summary)



This diagram shows only the most important concepts and relationships

The Strategic Enterprise Architecture Discipline

Three Main Contributions of the Strategic Enterprise Architect Role

Generating insights

Fitness-for-context strategist

- Tracking competitive advantage performance requirements: *What will it take to lead?*
- Articulating requisite variety needed to survive in all plausible enterprise contexts

Enacting & enabling strategic decisions

Strategic-capability builder

- Tracking emerging digital strategy trends and imperatives
- Articulating scenarios and interpreting signals about capability fitness needs

Owning specific value levers

Systems definer

- Leading the strategic conversation to achieve consensus on emerging system requirements
- Defining architectural principles, models, and standards for strategic system initiatives

The key responsibility of the Strategic Enterprise Architect is to ensure the enterprise's capabilities and systems are fit for all plausible current and future contexts.

Inspired by McKinsey's report, "Rethinking the role of the strategist." See notes.

Three Approaches and Timeframes for Strategic Enterprise Architecture

Approach	Emergent (Reactive)	Short-term Trend Projection	Longer-term Scenarios
Distinctive Activities	Respond to emerging capability needs with supporting systems and technology innovations	Anticipate near-term changes in capabilities, supporting systems, and technologies	Develop scenarios and strategies for plausible changes in capabilities, supporting systems, and technologies

Strategic Enterprise Architecture is developed in close cooperation with the strategy group

- The strategy group focuses on the overall enterprise context and capabilities
- The Enterprise Architecture group focuses on systems and technologies to support those capabilities in context

A given Strategic EA team may mix these approaches for different aspects of their work.

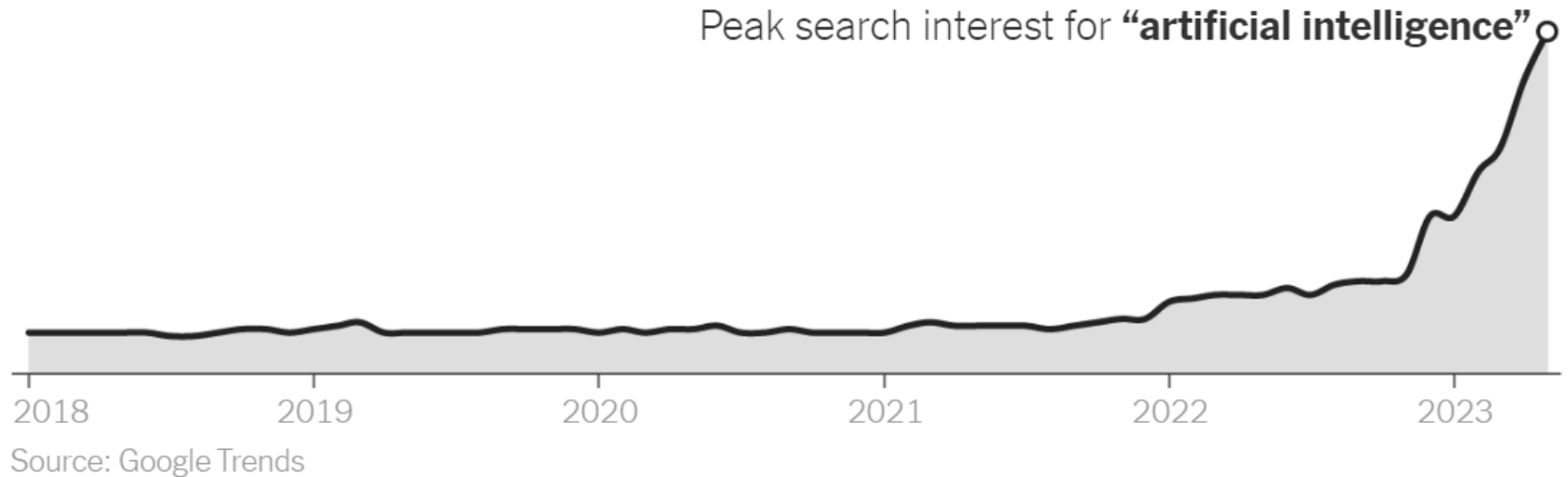
Summary of What We Have Covered

1. The Dilemma:
*Balancing Fitness for Today's Purpose With Fitness for Tomorrow's **Disruptive** Context*
2. What “fitness for context” entails
3. The Adaptive Enterprise Cycle methodology and views, along with key tools
4. The discipline of Strategic Enterprise Architecture
5. Example Use of the Adaptive Enterprise Cycle Methodology: Generative AI as a Disruption

Example: Generative AI as a Disruption

- What is Generative AI?
 - Why is it a good example of a disruption?
- How does our approach help enterprises ensure they are fit for this disruption?
 - What are the opportunities?
 - What are the risks?
 - What are some key use cases?
 - What are some key uncertainties and scenarios?
 - What are some key principles?
 - What are some other key questions?
 - What should enterprises do now and in the future?

Interest in AI Over the Last 5 Years



Generative AI Headlines

**It's Not the End of Work.
It's the End of Boring Work.**

**Report Sounds Alarm on
Imminent Harms of Generative AI**

How AI Knows Things No One Told It

**To See One of AI's Greatest Dangers,
Look to the Military**

**Microsoft Says New AI Shows
Signs of Human Reasoning**

**A.I. Poses 'Risk of Extinction,'
Industry Leaders Warn**

What is Generative AI?

- A quantum improvement in interactive search
 - Includes the ability to have conversations
 - a reasonable claim that ChatGPT passes the Turing test
 - Generates text, speech, images, etc.
 - Uses a (non-human) model of reality derived from WWW content
 - Uses feedback from users to improve its operation
 - Largely non-transparent in how it works
- Some analogies of current state of Generative AI
 - Escalation (gold rush, war, race to dominate markets and niches)
 - Reminiscent of Netscape vs. Microsoft
 - Future that has already happened
 - Implication: get with it or get left behind
 - Humanity's doom / Frankenstein's monster

A Surprisingly Mature Conversation

- Question: “From the perspective of a ... dean of Engineering ... and science-fiction enthusiast who read *2001: A Space Odyssey* many times, ...
How will the role of engineers in society evolve as they create technology alongside powerful AI agents?”
- ChatGPT4: “The parallels between HAL’s journey in the Space Odyssey and our own path serve as both a cautionary tale and a source of inspiration. ... Technology will continue to advance, and it is our duty to ensure that it augments human values rather than working against them. **The key lies in striking a balance between embracing the potential of AI and safeguarding the well-being of humanity.**”

<https://unlocked.microsoft.com/ai-anthology/alec-gallimore/>

Key Benefits

Opportunity to:

- Improve quality of search for and generation of useful information
- Lower the cost of customer support and other automatable information work
- Greatly improve the quality of human understanding
- Make \$, €, £, ¥ ...

Key Risks

- Misuse by normal users
 - Believing and spreading bad information
 - HR discrimination
 - Unintentional use of another's IP
- Malicious use by bad actors
 - Spreading disinformation and propaganda
 - Generating believable text, images, video for phishing and other cybercrimes
 - Identifying and possibly using zero-day exploits
 - Exploiting limits to malware detection
- Unintended side effects
 - White collar job displacement
 - Spiraling disinformation
 - E.g., vaccines only 2% effective
 - Society- and world-wide risks of harm
 - E.g., Diminishing trust, rogue weapons, cyberwarfare, ...

Some Key Use Cases (from ChatGPT)

Normal Use Cases:

1. Content Generation
2. Virtual Assistants and Chatbots
3. Personalized Product Recommendations
4. Data Augmentation
5. Creative Design Assistance
6. Medical Image Analysis
7. Abstractive Summarization

Misuse Cases:

1. Fake News Generation
2. Deepfake Creation
3. Malicious Content Generation
4. Counterfeit Product Creation
5. Identity Theft and Fraud
6. HR Discrimination
7. Escalation of weapons and defenses

Key Uncertainties About How Generative AI Might Evolve (from ChatGPT)

1. Ethical and societal impact
 - Malicious misuse, AI-generated misinformation, invasions of privacy
2. Creative and artistic potential
 - Can AI truly exhibit creativity?
3. Human-AI collaboration
 - Can AI work effectively with human creators? Will it replace them?
4. Generalization and understanding
 - AI models may lack deep-enough understanding of concepts, context, and meaning to generalize and adapt to novel situations.
5. Unintended biases and fairness
 - Models may inadvertently perpetuate biases or prejudices.
6. Robustness and security
 - Adversaries could potentially manipulate the AI models to generate misleading or malicious content.
7. Environmental impact
 - AI models can be computationally intensive, requiring significant energy consumption and computing resources.

These uncertainties highlight the need for ongoing research, responsible development, and ethical considerations as generative AI evolves.

Positive and Negative Scenarios for Uncertainties Surrounding the Evolution of Generative AI (from ChatGPT)

1. Ethical and societal impact:

- Positive: Robust Regulation and Ethical Standards
- Negative: Malicious Misuse and Deepening Divide

2. Creative and artistic potential:

- Positive: Augmented Creativity and Collaborative Expression
- Negative: Erosion of Human Artistic Value and Originality

3. Human-AI collaboration:

- Positive: Harmonious Collaboration and Complementary Skills
- Negative: Job Displacement and Dependency

4. Generalization and understanding:

- Positive: Improved Generalization and Contextual Understanding
- Negative: Unreliable Generalization and Misinterpretation

5. Unintended biases and fairness:

- Positive: Bias Mitigation and Fairness Measures
- Negative: Amplification of Biases and Discrimination

6. Robustness and security:

- Positive: Enhanced Robustness and Security Measures
- Negative: Vulnerabilities and Exploitation

7. Environmental impact:

- Positive: Sustainable Practices and Energy Efficiency
- Negative: Increasing Environmental Footprint

ChatGPT's Output for the Two “Ethical and Societal Impact” Scenarios

1. Ethical and societal impact:

- **Positive Scenario: Robust Regulation and Ethical Standards.** In this scenario, there is a generally positive resolution to the ethical and societal impact of generative AI. Governments, organizations, and researchers work together to establish robust regulations and ethical standards for the development and deployment of generative AI technologies. Transparent and accountable practices become the norm, ensuring that AI-generated content is used responsibly, and potential harms are minimized. Public trust in generative AI grows, and society benefits from the creative and productive applications of the technology.
- **Negative Scenario: Malicious Misuse and Deepening Divide.** In this scenario, generative AI is predominantly used for malicious purposes, leading to a generally negative resolution. Deepfake technology and AI-generated misinformation become widespread, leading to widespread public distrust. The technology exacerbates existing social, political, and economic divisions, causing misinformation wars and societal unrest. Regulators struggle to keep up with the evolving technology, leading to a lack of effective safeguards. The negative consequences overshadow the potential benefits, hindering the responsible development and usage of generative AI.

A Key Driver and Goal

- Driver: self interest
- Goal: don't get left behind
 - Architects don't want to be unemployable due to obsolete skills
 - Enterprises don't want to become irrelevant and fail due to obsolete capabilities

Generative AI has the potential to be a “game changer” and must be taken seriously by architects and enterprises!

Example Principles

- **Strong AI governance.** Under the leadership of our Chief AI Officer (CAIO), all relevant stakeholders, including legal, the C-suite, boards, privacy, compliance and HR, are involved throughout the entire decision-making process for AI initiatives.
 - **AI C-Suite Toolkit.** We use and contribute to the World Economic Forum AI C-Suite Toolkit as a base for our AI governance.
- **What could possibly go wrong.** For every use case, we include all known plausible misuse and abuse cases and harden our systems to avoid and/or mitigate their harms.
 - **Continuous adaptation.** We continuously test and monitor our systems for existing and new misuse and abuse incidents, as well as unintended consequences, and adapt accordingly.
- **First do no harm.** If in doubt about the safety of a function, we do not deploy it unless and until we become convinced of its safety, even if this means our capability appears to trail competitive offerings.

Microsoft Responsible AI Principles

- **Fairness:** AI systems should treat all people fairly
- **Reliability & Safety:** AI systems should perform reliably and safely
- **Privacy & Security:** AI systems should be secure and respect privacy
- **Inclusiveness:** AI systems should empower everyone and engage people
- **Transparency:** AI systems should be understandable
- **Accountability:** People should be accountable for AI systems

<https://www.microsoft.com/en-us/ai/our-approach?activetab=pivot1:primaryr7>

Adaptive Enterprise Cycle: Generative AI Questions

The disruptive change:

Generative AI is today's hot topic. Saves lots of time in searching and creating content. Lots of money to be made for those who act quickly. Some major concerns: not ready for prime time (incomplete, inaccurate, unpredictable); security, privacy, and legal issues; open to abuse; changes in information jobs; ... "Risk of Extinction"

What does GenAI mean for us?

- What are the key opportunities and risks for us now and in the near future?
- Does this mesh with scenarios we track?
- How do we need to change our thinking?
- Where do we need better understanding?
- What is critical to address now?

- How must our strategy change?
- How do we adjust our strategic context view and its scenarios?
- Do our key stakeholders have the needed GenAI expertise? Are they all engaged?
- How to adapt our strategic EA?
- How do we measure and improve fitness now?
- What initiatives must change?

Potentially Disruptive Change

Recognize:
Sense & Interpret

Decide:
Strategize, Architect, Plan

Adaptive Enterprise Cycle

Improve:
Assess & Adapt

Integrated Governance & Learning

Act/Develop:
Design & Build, Test, Deploy

Act/Use:
Operate, Monitor, Maintain

- Do the architecture and developed system(s) allow effective adaptation to achieve the desired fitness?
- Do we need to start a new cycle or revisit an earlier phase?
- How can we improve our training, understanding, processes, and roles?

- What impact does GenAI have on use cases, systems, roles, training?
- What GenAI platform, APIs, own data?
- How to test AI systems?
- Can we find unintended consequences with limited deployment?

- Do we capture GenAI decisions and update our BoK?
- How do we update training to ensure viability of testing and deployment and act/use
- Do we have a process with roles and escalations to address misuse, abuse, and even unintended consequences?

- How do we monitor both normal and aberrant operations?
- Are use cases emerging that we don't have the flexibility to handle?

Strategic Factors for Generative AI

- Can we get the needed expertise?
- Do we have the resources to invest adequately?

- What political implications might influence our use of GenAI? Should we limit our use until we understand these implications?

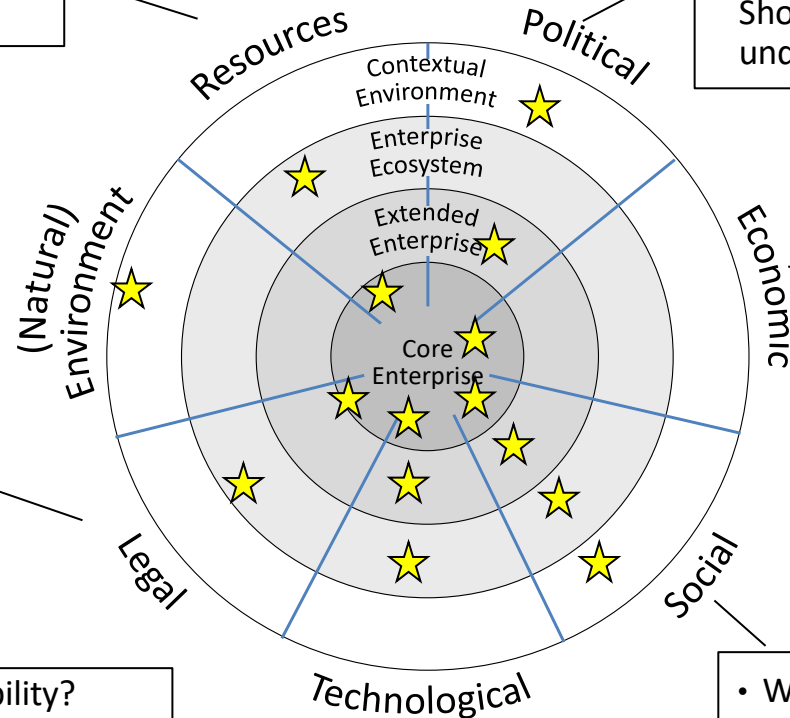
- How do we deal with the high energy needs without increasing carbon footprint?

- What regulations make sense for us? How can we influence their adoption?
- What legal exposure do we need to worry about?

- How strategic is GenAI for our capability?
- Where might there be opportunities for us?
- Where might we be vulnerable to GenAI risks?
- In what ways is our Enterprise Ecosystem ready or not ready for GenAI?

- What is the economic magnitude of our GenAI opportunities and risks?

- What expectations and fears do our customers, user, employees and other stakeholders have about our use/non-use of GenAI?



Using the FUSERS Model to Evaluate Capability Fitness With GenAI

Function

- Which current functions are impacted by the emergence of GenAI?
- What new functions might we need? When? How do we know?
- What is the impact of malfunctions, omissions, limitations, unpredictability, and other issues?

User/Stakeholder Experience

- Do we understand the emerging UI paradigm and expectations for GenAI?
- Have we engaged all key stakeholders both internal and external, including those whose jobs may change or disappear?
- Do we build in the capability for users to contact a human when necessary?

Safety/Security

- How do we track emerging GenAI-related cybersecurity risks?
- How do we detect misuse, abuse, and unintended consequences?
- Can we recognize and deal with deep fakes and disinformation?
- How to protect intellectual property from unintentional disclosure?
- How do we recognize and adjust to data privacy issues?
- What stakeholder harms to consider?

Economics

- Adequate resources to seize opportunities and defend markets?
- Can we reduce operational expenses through judicious use of GenAI?
- Where should we use GenAI to improve the cost effectiveness of our strategy, planning, and execution?

Sustainability

- Survive: Do we have the resources and flexibility to deal effectively with disruptive GenAI changes over time?
- Thrive: Do we value and have the processes in place to spot and seize opportunities to disrupt our competition?
- Do we have a continuous process for recognizing strategic signals that detect emerging GenAI capabilities and adapting?

Context
(PESTLER)

Capability Fitness

Function
User/Stakeholder Experience
Safety/Security
Economy
Responsiveness
Sustainability
...

Responsiveness

Do we have:

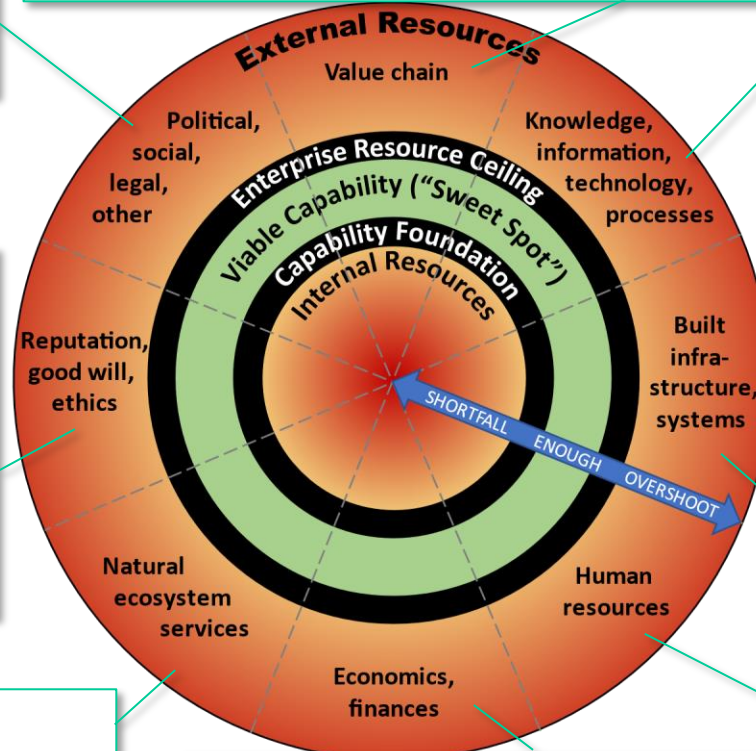
- The ability to quickly adapt B2B and C2B interfaces to the latest GenAI challenges?
- Skills in place to align with new UI paradigm expectations?
- Monitoring to recognize and rapidly respond to misinformation, biases, privacy issues?

- Sufficient attention to privacy and copyright?
- Safety of AI-controlled equipment?
- Attention to jail breaking and redirection to nefarious activities?
- Identification and response to damaging misinformation?

- Security: How do we check that suppliers are real?
- How do we ensure the chain of truth for
 - Images, videos, etc.
 - Reviews and assessments
- How might distribution of goods and services be attacked?
 - E.g., distribution of food, medicines by NGOs

- How to recognize
 - deep fakes
 - Bogus information from GenAI
- How to keep up with rapidly evolving GenAI? How do we know that we know enough?
- What experiments should we do and by whom?
- What is the process that makes sure that we don't overlook vulnerabilities and flaws?

- How do we spot and avoid damage to our enterprise by misuse or abuse?
- Do we understand the limitations of GenAI and set proper expectations?
- How to recognize and avoid GenAI jail?
- How do we monitor and control unethical behavior rapidly?



- How must current systems change to support GenAI.
- Is there a potential for cascades?
- Is our knowledge of systems built with GenAI accurate?
- Which current systems can be adapted/ extended to exploit GenAI?
- What are the current obstacles to incorporating GenAI?
- Organizational?
- Extended enterprise and ecosystem?

- What will be the impact of energy-hogging server farms?
 - How can we mitigate (e.g. solar farms)?

- Enough computing capability to support use cases?
- True understanding of what human resources are impacted and how?
- Who supplies GenAI capability and at what cost?
- How to evaluate competing offerings and what costs are reasonable?

- Enough people trained to
 - Use GenAI effectively?
 - Recognize holes and plug?
 - Evaluate guard rails?
 - Control release of copyrighted and private information?

Actions for Enterprises New to Generative AI

1. Become familiar with GenAI

- Follow the GenAI news
- Educate all strategic stakeholders

2. Use GenAI on something you understand well

- Does it give good, complete-enough answers?
 - Where is it wrong? Incomplete?
- Is it useful? Would it help you improve your performance?
- Understand how it arrives at its answers, recommendations, etc.
 - Make it iterate (successive approximation), summarize
 - Make it answer specific questions about apparent omissions and faulty reasoning

3. Adopt principles for responsible use of AI

- Designate a leader responsible for making it part of your culture (with incentives)

4. Look for limited GenAI deployments with low risk and high benefit

- Pick one and deploy it

5. Use the limited-deployment GenAI capability

- Assess and improve
- Document experience and learning
- Broaden deployment when appropriate

6. Repeat

Questions?

See sbsapartners.com for more information about the book.