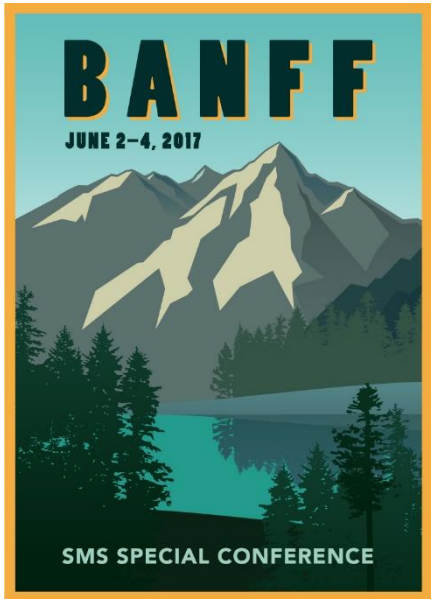
The Origins, Historical Trajectory and Contemporary Applications of the Dynamic Capabilities Approach



Chair: Jim Dewald, University of Calgary

Welcome: Elizabeth Cannon, University of Calgary

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DYNAMIC CAPABILITIES: Contemporary Triggers, Classical Antecedents, & Implications for the Theory of the Firm & Strategic Management
(abridged version)

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Strategic Management Society's (SMS) Banff 2017 Special Conference on Transforming Entrepreneurial Thinking into Dynamic Capabilities

*Slides partially based on:

1. D.J. Teece, "Toward a Capability Theory of (Innovating) Firms: Implications for management and policy", *Cambridge Journal of Economics*, 2017 1 of 28
2. D. Teece, M. Peteraf, S. Leih, "Dynamic Capabilities & Organizational Agility: Risk, Uncertainty, & Strategy in the Innovation economy", *California Management review, Vol.58, No.54 (Summer 2016)*..

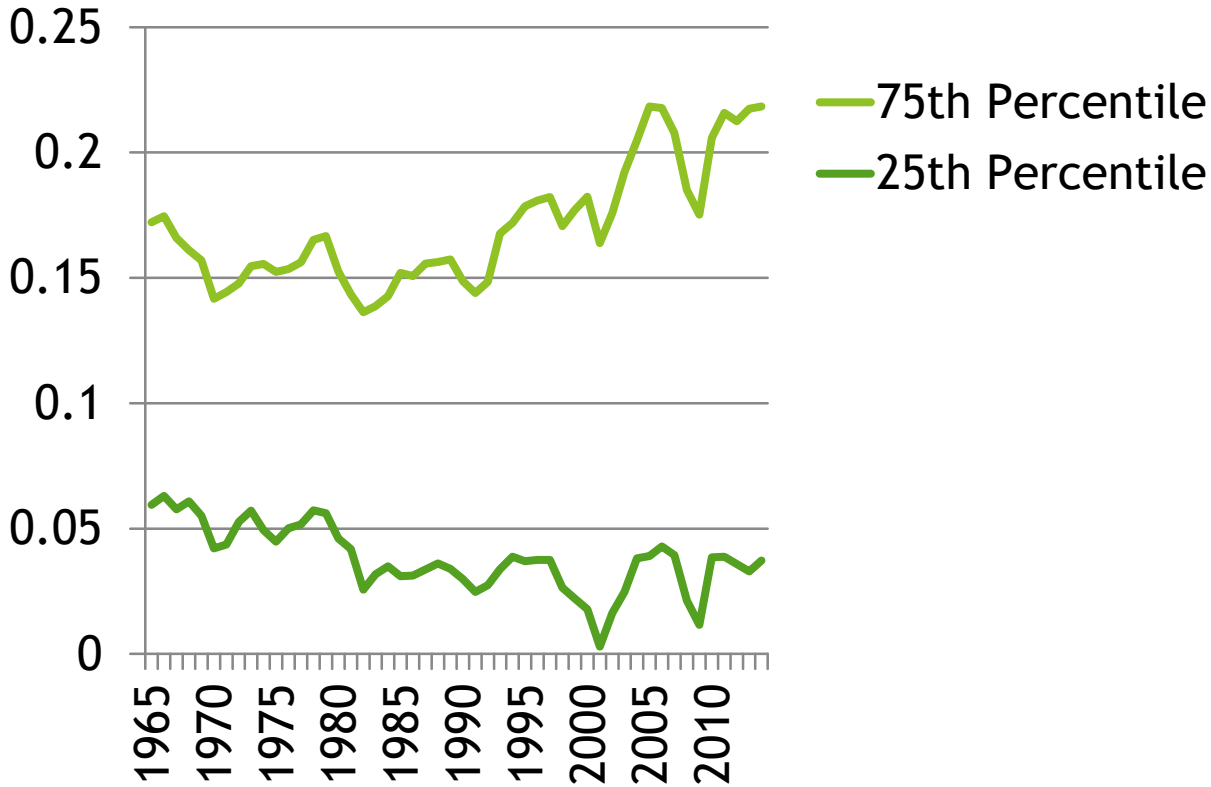
I. THE NEED FOR A CAPABILITIES PERSPECTIVE: Empirical "irregularities" & incantations from Nobel Laureates & others

Heraldic pronouncement from esteemed Prof. John Sutton, London School of Economics

- “The proximate cause [of differences in the wealth of nations] lies, for the most part, in the capabilities of firms”

  (Sutton, 2012: 8)

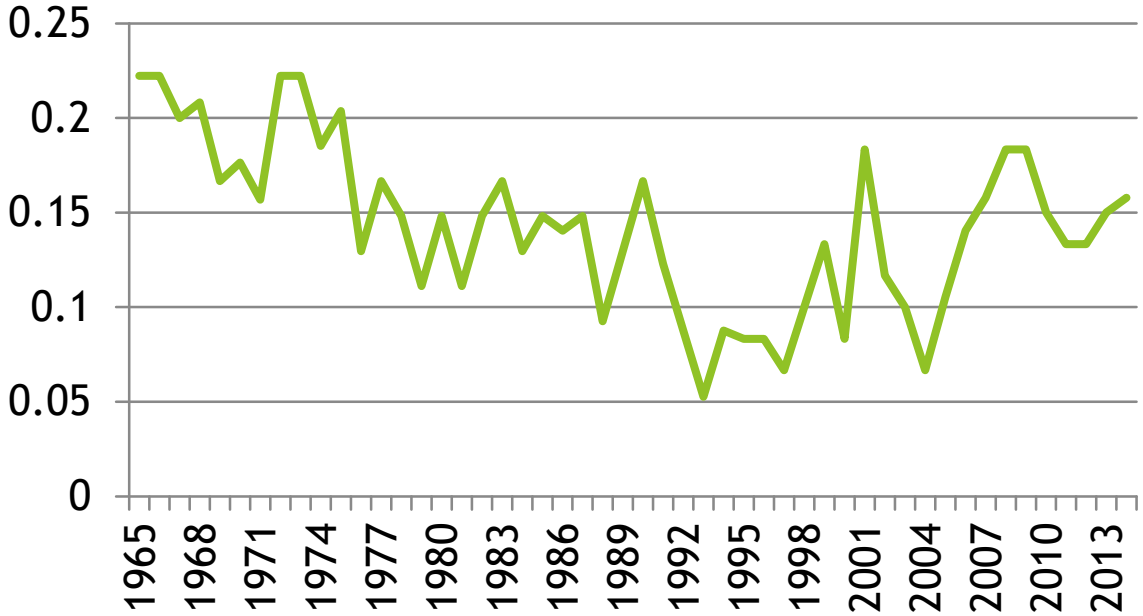
Top and Bottom Profit Margin Percentiles



Source: Compustat
Notes:

- Profit margin is defined as EBIT divided by revenue
- The sample was restricted to firms with $100 million in revenues in at least one of the years between 1965 and 2014
- Revenue field was considered missing whenever it was zero or negative
- Industries were defined using manual grouping by the 2-digit SIC code. Quartiles were calculated across all industries
- Only years with the minimum number of 20 companies were considered
- Industries included: Multiple
- Annual data derived from the financial statements of active and inactive North American publicly traded companies. The sample was restricted to companies with $100 million in revenues in at least one of the years between 1965 and 2014

Largest firms which are also profitability leaders: Is there increasing liability associated with dominance?



Source: Compustat
Notes:

- Fraction of 3 largest firms in each industry (in terms of revenue) which are also in the top (75th) probability percentile across all industries
- The sample was restricted to firms with $100 million in revenues in at least one of the years between 1965 and 2014
- Profit margin is defined as EBIT divided by revenue. Revenue field was considered missing whenever it was zero or negative
- Industries were defined using manual grouping by the 2-digit SIC code. Quartiles were calculated across all industries
- Only years with the minimum number of 20 companies were considered
- Industries included: multiple
- R-squared= 22.73%

Economists can no longer claim to analyze income inequality issues while relying on black-box models of the firm

- Wage differences are larger between companies than within them (e.g., Barth et al., 2016; Abowd, McKinney and Zhao, 2017)
- Over two-thirds of the increase in earnings inequality from 1981-2013 can be accounted for by the rising variance of earnings between firms
- Inter-firm wage inequality has become greater and more persistent as firms increasingly sort themselves into a small number of knowledge-intensive companies and a larger pool of relatively labor-intensive firms.

The capability to innovate and change is the very essence of capitalism, but it is deeply underplayed in modern economic theory

- As Nelson (1981) explains, the very essence of capitalism—in fact, the very advantage of a private enterprise economy over a planned one—is that, with private enterprise, firms innovate, compete, sometimes disrupt each other, and sometimes cooperate
- Nelson is surely right; so theories of the firm that do not put innovation and change center stage are not in tune with the essence of our economy or the fundamental managerial challenges of our time

Certain Nobel Laureate economists express deep concern about the current state of academic research

- "Year after year economic theorists continue to produce scores of mathematical models and to explore in great detail their formal properties ... without being able to advance, in any perceptible way a systematic understanding of the structure and the operations of a real economic system." (Wassily Leontief, 1982: 107)
- "Economics as currently presented in textbooks and taught in the classroom does not have much to do with business management", which has "severely damaged both the business community and the academic discipline… it is time to re-engage the severely impoverished field of economics with the economy" (Ronald Coase, 2012)

Nobel Laureate Amartya Sen highlights capabilities

- Grapples with capabilities, but his focus is on what can be called ordinary capabilities, in contrast to the dynamic capabilities that are the main focus here
- Capability framework is articulated more at the level of the individual, not that of the organization
- Capabilities are seen as the fulcrum for leveraging tangible resources into human achievement
- Recognized that individuals can differ greatly in their abilities to convert a given set of resources into outputs

II. Antecedents from the classical economist

Alfred Marshall (the founder of modern microeconomics) recognized that management matters

- In *Principles*, Marshall (1920) recognizes the role of management in determining enterprise performance
- Managers fall into those "who open up new and improved methods of business and those who follow beaten tracks."
- Managers, or "businessmen", "adventure" or "undertake" the risks (and uncertainties) of business. They bring together capital and labor, conduct planning, and superintend to minor details
- The manager is "the natural leader of men" (Book IV, Chapter XII, p.173). Marshall notes that good managers are hard to find, and that management skills tend to atrophy

Frank Knight (1921) hinted at the need for dynamic capabilities theory of the firm

- "With uncertainty present, doing things, the actual execution of activity becomes in a real sense a secondary part of life; the primary problem or function is deciding what to do and how to do it" (Knight, 1921:268)
- Interpretation: Making the right investments is critical while optimizing current activities for efficiency is less important.
- However, if investments are irreversible, there are potential problems

Lord Keynes (1936) with his appeal to "animal spirits" was perhaps searching for a theory of (dynamic) capabilities?

- Keynes was keenly aware of the importance of firm-level investment decisions and long-term investor expectations for macroeconomic theory
  - Invoked "animal spirits" not to signal irrational behavior but to help explain investment decisions under uncertainty. Investing requires some kind of "leap of faith" because of the fog of ambiguity around financial outcomes
- Keynes noted: waiting too long for the future to unfold will often cripple decision making
  - "Most, probably, of our decisions to do something positive, the full consequences of which will be drawn out over many days to come, can only be taken as a result of animal spirits—of a spontaneous urge to action rather than inaction, and not as the outcome of a weighted average of quantitative benefits multiplied by probabilities... Thus if the animal spirits are dimmed and the spontaneous optimism falters, ... enterprise will fade and die."

    -Keynes, 1936, p.161

Lord Keynes & Jeff Bezos (Amazon) see eye-to-eye

- Keynes stressed that if human nature felt no temptation to take a chance and investment had to rely on cold calculation, there might not be much investment
- Likewise, Jeff Bezos, the CEO/founder of Amazon, noted:

> "there are decisions that can be made by analysis … Unfortunately, there's this whole other set of decisions that you can't ultimately boil down to a math problem" (Deutschman, 2004, p. 57)

III. Resources & Capabilities

Resources: A contribution of heterodox industrial economics

- Resources are the tangible and intangible assets, broadly defined, that the firm can develop and effectively control.
- Resources, include the skills of the firm's employees, its equipment, and the collective skills of the organization, generate streams of services that the firm can deploy
- As theorized by Penrose (1959) a firm at any point in time is likely to have underemployed resources, including management skills
- A firm with excess resources will only sometimes find it profitable to monetize those services via product diversification (Teece, 1980a, 1982)
- However, the resource based model (Rumelt, Wernerfelt, Barney, & Amit), has a core assumption that resources are "inalienable" in the sense that they are tied to the firm

Dynamic Capabilities Builds on/Accepts Resource Based View. However:

- While the resource view is strategic, it is static
- Each element of VRIN can change over time:

Resource-Based Concept	Commentary
V= Valuable R= Rare I= Imperfectly immitable N= Non-substitutable	▪ Bottlenecks can migrate up and down the value chain, horizontally and laterally, e.g. valued Computerland's retail footprint in the 80's & 90's was destroyed by Dell's direct-to-customer business model ▪ Patents can expire, products can be reverse engineered ▪ New substitutes are being invented constantly, e.g. margarine for butter; electric cars for internal combustion engine cars

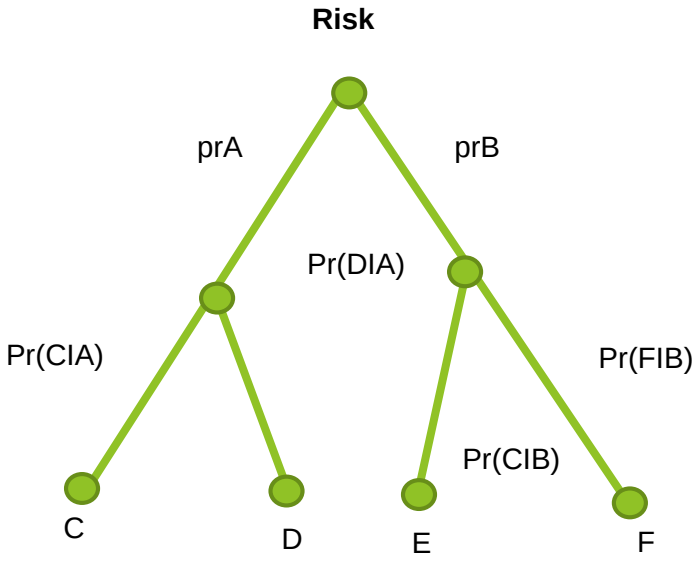
Observations on the resource-based approach

- **How resources are built**, coordinated and managed **is at least as important** to competitive success and survival as the identity of the resources themselves
- Capabilities such as asset orchestration and market creation (or co-creation) are vital to profitable "resource" management (Pitelis and Teece, 2010)
- Whereas the resource based framework can **explain competitive advantage for the moment,** it cannot explain it over time because it ignores uncertainty
- Yet, dynamic capabilities requires managers to understand VRIN ideas: the frameworks are complements, not substitutes

"DYNAMIC CAPABILITIES: THE RESOURCE BASED APPROACH ON WHEELS & WITH AN ENGINE"

IV. The critically of the distinction between risks & uncertainty for understanding modern management frameworks

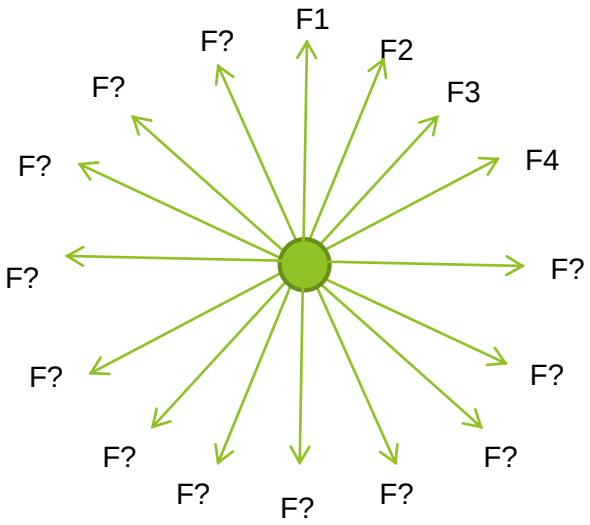
Strategic Management requires distinguishing between risk and uncertainty



Alternative futures with known probabilities & known conditional probabilities

Strategic Management requires distinguishing between risk and uncertainty

Uncertainty



Don't know most futures or their probabilities with (unknown unknowns with probabilities)
F 1-4 are possible futures
F? are undefined futures

Chess v. Mixed Martial Arts (MMA). MMA is a good metaphor for competition under uncertainty in the innovation economy

Chess

Each move is knowable (closed world). The better player almost always wins. A large but finite number of moves and counter moves. If the player (e.g. a computer) has unlimited computational powers, chess is a trivial game as Von Neumann and Morgenstern once observed

MMA

Not a closed world… rules more permissive. Striking, grappling, boxing, kickboxing, Brazilian Jujitsu, Judo, and wresting are all widely employed

There exists a premium to entrepreneurial management when there is deep uncertainty

The lack of predictability and deep uncertainty in MMA is not unlike todays interdependent innovation economy.

- Existing “rules” of competition are being changed
- Entirely new “rules” are invented (e.g. cloud computing; Amazon Prime, internet of things)
- New players constantly emerging (e.g. mobile money, start-ups versus the banks)

To succeed in this world, managers need to be entrepreneurs, and entrepreneurs need to be (or find) managers too (e.g. Brin and Page found Schmidt to be CEO of Google).

V. The capabilities framework- general

Strong “ordinary” (or normal) Capabilities: Requires resources to be used efficiently

- Operations, administration and governance are the focus of ordinary capabilities
- Routines / standard operating procedures are key to ordinary capabilities
- Ordinary capabilities reflect technical efficiency
- Diffusion of ordinary capabilities to rivals is enabled by
    - More information in the public domain
    - Better business school training
    - Management consultants
- “Best practices” logic connected to strong ordinary capabilities
- Admittedly, not everyone gets the simple stuff right

Best practices don't suffice

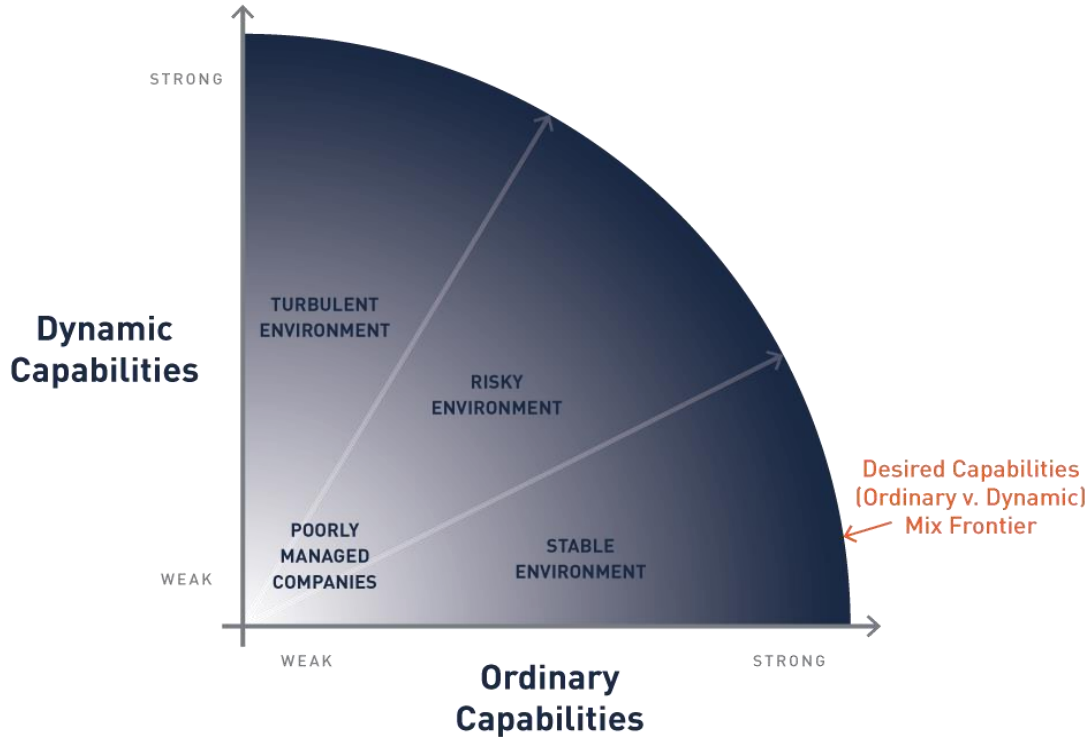
- There is no benefit at being very good at delivering the "wrong" products
- Best practices alone are generally insufficient to ensure a firm's success and survival, except in weak competitive environments (which are still ubiquitous in less-developed countries).
- Much of the knowledge behind ordinary capabilities can be secured through consultants or through a modest investment in training (Bloom *et al.*, 2013).

Being a top performer in productivity is unlikely to generate competitive advantages because it only takes a few firms at the frontier to drive prices down to competitive levels

From ordinary to dynamic capabilities in autos

- **Ordinary: The operations portion of the automobile business has been thoroughly optimized** over many decades, doesn't vary much from one automobile company to another, and can be managed with a focus on repetitive process. It requires little in the way of creativity, vision or imagination. Almost all car companies do this very well, and **there is little or no competitive advantage to be gained by "trying even harder"** in procurement, manufacturing or wholesale
- **Dynamic:** Where the real work of making a car company successful suddenly turns complex, and **where the winners are separated from the losers, is in the long-cycle product development process,** where short-term day-to-day metrics and the tabulation of results are meaningless.
- *-Bob Lutz, former vice chairman at General Motors, Wall Street Journal, June11, 2011*

Deep uncertainty (turbulent environments) require strong dynamic capabilities:

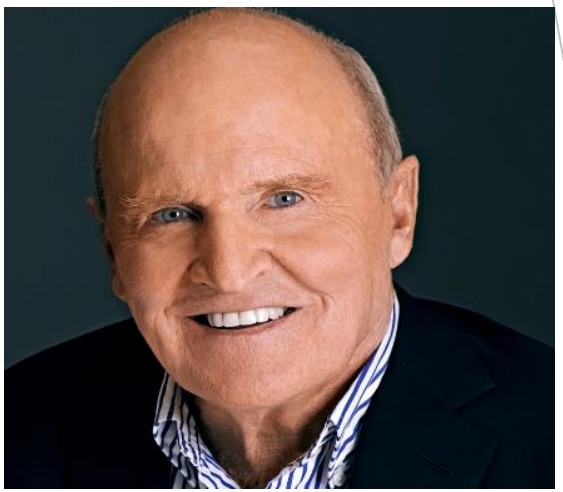


With stable environments ordinary capabilities are good enough & the VRIN criterion provides meaningful guidance

Dynamic capabilities can be thought of as falling in three categories:

Sensing is the ability to see around corners

The ability to foresee future opportunities and threats… what Jack Welsh (CEO of GE) once referred to as the ability to "**see around the corners**"

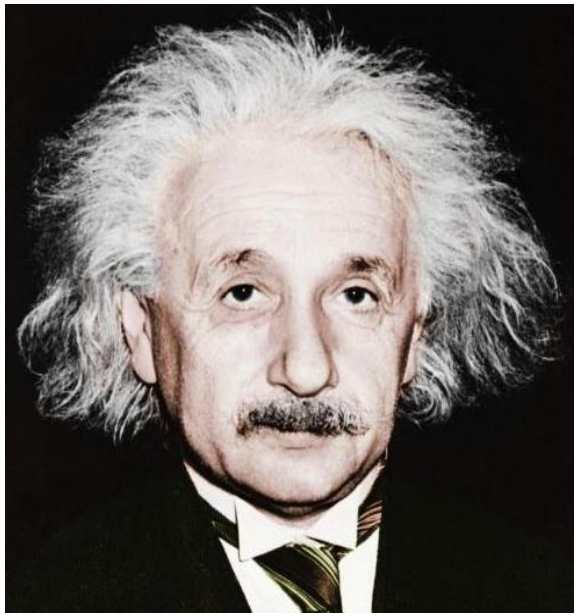


Sensing & Black Swans

- Alert businesses can “discover” the future ahead of the competition
- “The future is bound to surprise us, but we don’t have to be dumbfounded”

  -Kenneth Boulding

Sensing is akin to discovery of the truth



"**Intellect has little to do on the road to discovery.** There comes a leap in consciousness, call it intuition or what you will, and the solution comes to you, and you don't know how or why."

Albert Einstein

Good sensing benefits from "abductive" reasoning as a way to help sense the future

- Explanations are developed for surprising or anomalous behavior/phenomenon
- Induction & deduction depend on the past
- Abductive reasoning moves ahead through "logical leaps of the mind" and uses all available data in a search for patterns
- Once an abductive hypothesis is established, data is searched to test the hypothesis, which in turn spurs original thinking
- Not used to determine if something is true or false, but to indicate a new path to "deep truth" about a phenomenon or a situation

Other tools to improve sensing

- Sometimes sensing is enabled by internal R&D activities ("search activities") and internal **scenario planning** and other tools to probe the future
- Internal R&D can be complemented (but not displaced) by **crowd-sourcing** ideas, or by tapping into ideas of customers (Von Hippel), supplies and/or other partners

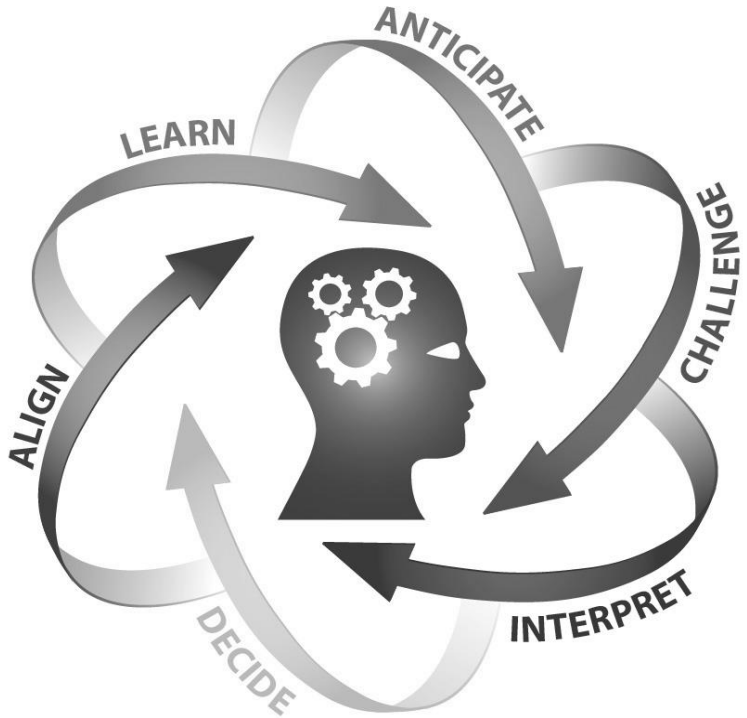
The challenge is to develop valid hypotheses about what is going on in the market

Seizing/Asset Orchestration is also core to dynamic capabilities

"Apple still has strong growth opportunities because of its ability to work simultaneously on hardware, software and services… Apple has the ability to innovate in all three of these spheres and create magic… **This isn't something you can just write a check for. This is something you build over decades.**"

-*Tim Cook, Apple CEO* (Taipei Times, February 2013)

Asset orchestration requires many skills



Source: Krupp, Steven and Paul J.H. Schoemaker, *Winning the Long Game: How Strategic Leaders Shape the Future*, Public Affairs/Perseus, 2014.

Transformation/Renewal

- Transformation issues reside between two extremes:
  - On one side it is frictionless organizational world of mainstream microeconomic theory, in which production technologies can be swapped modified
  - At the other end of the spectrum lies path dependence, captured by the organizational ecology view that some kind of organizational inertia (irreversibility) prevents most firms from changing in response to existential strategic threats

Irreversibilities: Nobel Laureate Ken Arrow's insight

- Ken Arrow noted:
  - in cases where a commitment is costless reversible, uncertainty poses no problem for the firm (Arrow, 1973)
  - There would be no need to peer into the future because, if today's plan proves unprofitable, the firm can try something different tomorrow without penalty
  - There would be no path dependence, and strategic renewal would be a straightforward affair

Organizational structure & culture

- Organizational structures, culture, and dynamics create a different- and probably more significant irreversibility
- Dorothy Leonard-Barton (1992) noted that the source of a company's strength can become a "core rigidity" that inhibits its development
- It is often harder to repurpose an organization than to repurpose a technology. The latter is often little more than writing a check; the former requires organizational reengineering

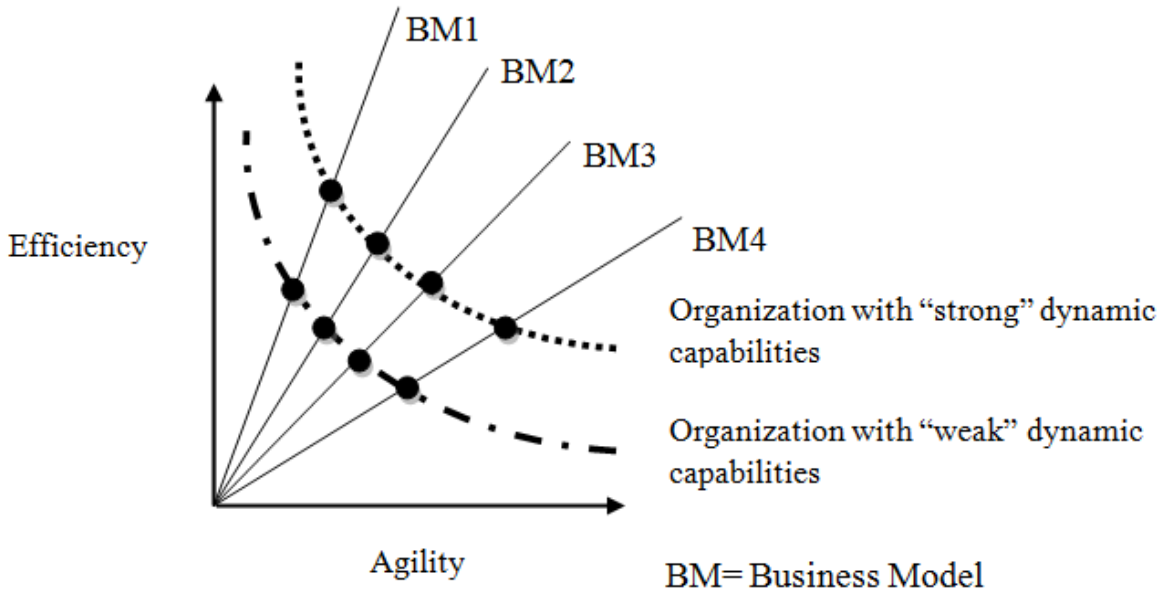
Figuring out how to manage/improve the agility/efficiency tradeoff is a hallmark of strong dynamic capabilities

- Agility is the capacity of an organization to efficiently and effectively redeploy/redirect resources to value creating and value protecting activities as internal and external circumstances warrant
- Agility is costly to maintain and need not always be desirable (when constructing Shinto Temples, change is undesirable)
- "The ability to calibrate the requirements for change and to effectuate the necessary adjustments would appear to depend on the ability to scan the environment, to evaluate markets and competitors, and to quickly accomplish reconfiguration and transformation ahead of competition" (Teece, Pisano, and Shuen, 1997:521)

Dynamic capabilities emphasizes a special kind of agility

- Dynamically capable firms have more than agility and more than ambidexterity
- Too often, agility is defined as the ability to do commonplace things faster and cheaper. If that's what one means by agility, it is more akin to ordinary (rather than dynamic) capabilities
- When agility refers to a reduction in the time required to reach best practices, it is simply an incantation for Six Sigma, Value Engineering, or other efficiency initiatives
- Those may be necessary for the organization to become more efficient; but they are only secondarily related to conferring evolutionary fitness
- What matters most is management's ability to redeploy physical, financial, and human assets to new and better commercial avenues

The Tradeoff between Efficiency and Agility is different in Organizations with Strong/Weak Dynamic Capabilities



The prioritization of ordinary capabilities can weaken dynamic capabilities & vice-versa

- As Benner and Tushman (2003) elegantly stated it as follows:

> "Activities focused on measurable efficiency and variance reduction drive out variance-increasing activities and, thus, affect an organization's ability to innovate and adapt outside of existing trajectories ... Core capabilities may become core rigidities" (Benner and Tushman, 2003: 242)

Capability/efficiency choices at Pepsi

"I had a choice. I could have gone pedal to the metal, **stripped out costs**, delivered strong profit for a few years, and then said adios. But that **wouldn't have yielded long term success.** So **I articulated a strategy to the board focusing on the portfolio we needed to build, the muscles we needed to strengthen, the capabilities to develop**…we started to implement that strategy, and we have achieved great shareholder value while strengthening the company for the long term."

Indra Nooyi and Adi Ignatius, "How Indra Nooyi Turned Design Thinking Into Strategy: An Interview with PepsiCo's CEO," Harvard Business Review (September 2015).

Transformation is about redeploying financial, physical, and human resources to effectuate organizational change

- What's needed is some kind of dynamic optimization, rather than the static optimization. Lou Gerstner, IBM's former (turnaround) CEO put it this way:

> "In anything other than a protected industry, longevity is the capacity to change ... If you could take a snapshot of the values and processes of most companies 50 years ago—and did the same with a surviving company in 2014—you would say it's a different company other than, perhaps, its name and maybe its purpose and maybe its industry. The leadership that really counts is the leadership that keeps a company changing in an incremental, continuous fashion. It's constantly focusing on the outside, on what's going on in the marketplace, what's changing there, noticing what competitors are doing."
>
> (Davis and Dickson, 2014: 125).

Dynamic Vs. Ordinary US Dynamic Capabilities

	Ordinary Capabilities	Dynamic Capabilities
Purpose	• Technical efficiency in basic business functions	• Strategic "fit" over the long run (evolutionary fitness)
Tripartite schemes	• Operational, administrative, and governance	• Sensing, seizing, shaping and transforming
Imitability	• Relatively easy; imitable	• Difficult ; inimitable

Doing things "right"

Doing the "right" things

VI. Capabilities and Strategy

Congruence (with strategy & capabilities) is important, and general systems theory alerted us to this 50 years ago

- Systems theory views organizations as social systems existing in different environments with units that must be associated if the organization is to be effective (Churchman, 1968)
- The underlying logic was later redeveloped into a pragmatic model of organizational alignment by Nadler and Tushman
- The Nadler-Tushman framework might be lacking some critical components. A business model, for example, defines the architecture of a business, specifying the value proposition to the customer and how the delivery of value is to be monetized (Teece, 2014). Is missing from their framework

EVEN IF ALL INTERNAL COMPONENTS FIT WELL TOGETHER, THE ORGANIZATION MAY FAIL IF IT DOESN'T FIT WHAT THE MARKET REQUIRE AND ITS BUSINESS MODEL IS MISSPECIFIED

Strategy is complementary to dynamic capabilities

"A good strategy is a 'specific' and 'coherent' response to—and approach for overcoming—the obstacles to progress."

"A bad strategy is a list of blue sky goals or a fluff-and-buzzword infected 'vision' everybody is supposed to share."

- *Strategy Kernel* (Rumelt, 2009)

“Resources” (number & tonnage of warships) isn’t decisive: Stalemate at the Battle of Jutland where strategy was absent

The British Navy at the Battle of Jutland, 1916

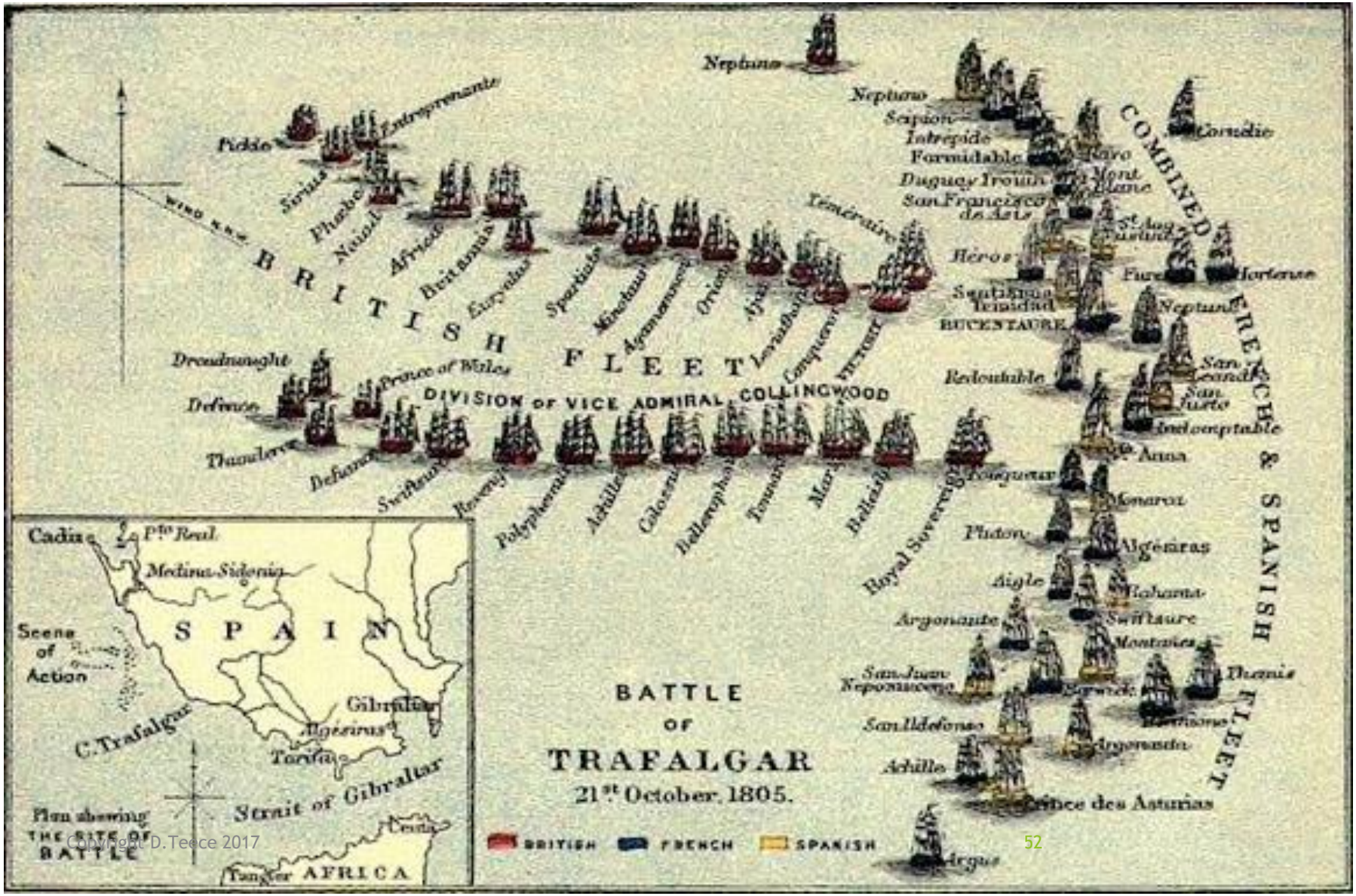
“There seems to be something wrong with our bloody ships today.”

Admiral John Jellicoe

“The real deficiency, however, was the loss of [Vice Admiral Horatio Lord] Nelson’s touch. It was not the bloody ships that were principally at fault. It was the inadequate doctrine of command and control.”

Frank Hoffman, “What we can learn from Jackie Fisher,” *Proceedings of the Naval Institute, April 2004, p. 70.*

Aligning agility & strategy – The Battle of Trafalgar



VII. Enhancing/modifying capabilities & closing capability gaps

Closing capability “gaps”

- Capability gaps are of at least three kinds:
  - Technology gaps
  - Market gaps
  - Business model gaps

Recognizing capability gaps isn't straight forward

- The first challenge is to understand the location and magnitude of capabilities deficiencies
- Often it is only after an organization tries to do something (and fails) that the gap is apparent. The early phase of a project looks okay because there are typically few outcomes metrics to evaluate
- Later on, problem begin to crop up, the senior team gets more and more involved, and the goal slips further away
- Ad hoc "solutions" are attempted and failed. Only then is there general recognition of a capability gap

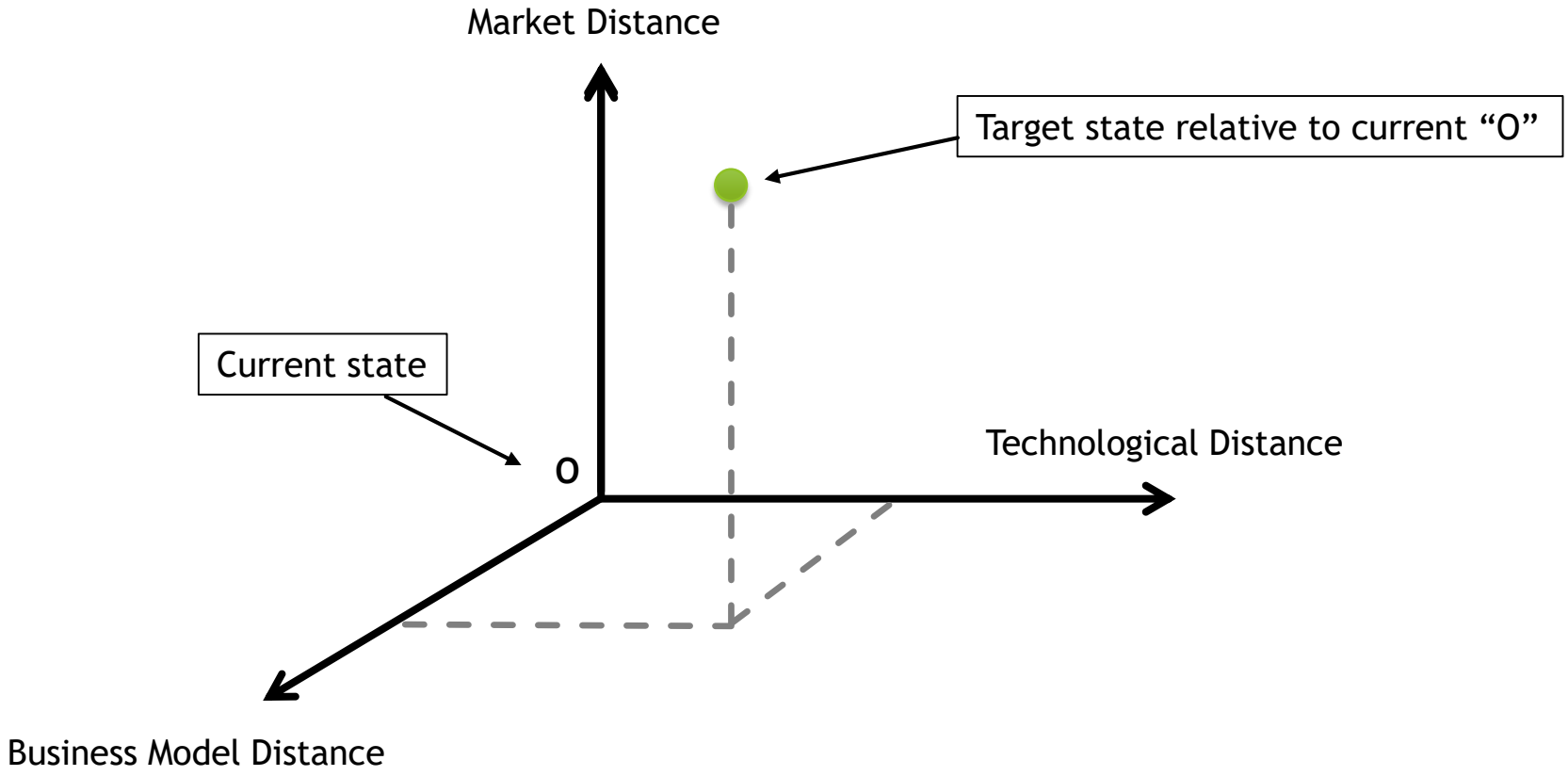
There may or may not be a resource gap behind an identified capability gap

- Resources are not capabilities
- There may be budgets and people assigned to a project (resources) but, if employee capabilities are not strong, performance failure is likely
- Building capabilities is hard; the silver lining is that, once built, they are then difficult for others to imitate
- Put differently, the absence of a market for capabilities means that benefits can flow from entrepreneurial and managerial activity that builds and hones value-creating capabilities

Organizational hubris tend to compel the exaggeration of current capabilities

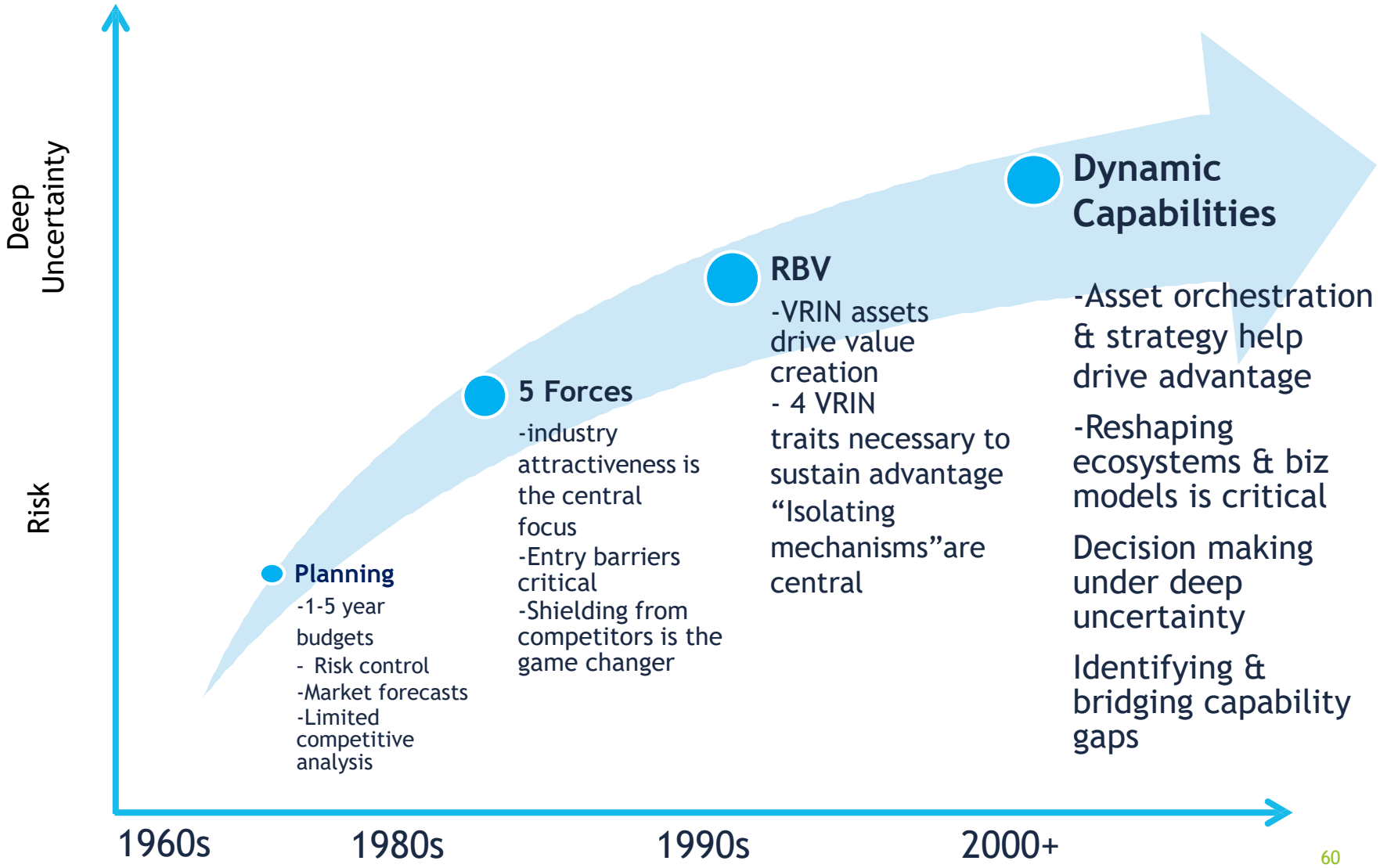
- The search for capability gaps begins by examining the match between a proposed business model and the firm's existing capabilities
- An analysis of existing capabilities needs an objective point of view that is detailed and realistic

Capability gaps & the transformation challenge



VII. Dynamic capabilities & competing approaches to the theory of the firm

The evolution of strategic management & “research based” thinking



A taxonomy of relevant theories

- There are at least three classes of (economic) theories of the firm:
  1. Production functions perspective
  2. Incomplete contracts and agency
  3. Knowledge and capabilities. Dynamic capabilities belongs to this class
- It is also recognized by some observers that both economic and strategic management perspectives are needed for a robust theory of the firm
- As Oliver Williamson (1999, p. 1106) observed, the two approaches (transaction costs and capabilities) are “both rival and complementary… more the latter than the former”

The dynamic capabilities framework as General Systems Theory Redux?

- Brings Knightian uncertainty, Marshallian evolution, Penrosean resources, Schumpeterian creative destruction, Keynesian "animal spirits," and Coase-Williamsonian transaction costs and Boulding's (1956) General Systems Theory together
- It can potentially explain not only why firms exist, but also their scope and potential for growth and sustained profitability in competitive markets riddled with deep uncertainty

Connections to economics: Invisible & Visible hand theories

- "Neoclassical theory's objective is to understand price-guided, not management-guided, resource allocation" (Demsetz, 1997: 426). This focus is a major limitation as it deflects attention from critical resource allocation decisions inside firms
- In particular, economists have been silent on critical managerial issues such as: (i) how firms innovate (beyond just spending money on R&D); (ii) why firms have capabilities that transcend the sum of individual skills of their employees and contractors; (iii) how individual firms sustain competitive advantage over rivals
- Capabilities theory falls into visible hand theories. Visible hand theories address resource allocation processes inside the firm

Visible & invisible hand theories are complementary

Paul Romer: The field of economics needs disruption (from the strategy field)?

- "A research program ought to involve risk" (Romer, forthcoming)
- Dynamic capabilities is a radical approach to the theory of the firm that puts capabilities and not the production function or contracts/governance center stage
- Dynamic capabilities doesn't ignore these other approaches… it seeks to integrate them

Berger Wernerfelt's "Adaptation, Specialization, and the theory of the firm" (Cambridge University Press 2016) is a refreshing contribution

- Key idea:
  - When firms must manage inevitable change, bargaining costs are incurred in adapting contracts
    - Wernerfelt claims these costs are sub additive. I.e. it's less expensive to do inside a single from than have hundreds of firms or individuals do it i.e. $c(zx) < z\,c(x)$
- Wernerfelt's model also assumes that gains from specialization are generated

Wernerfelt recognizes that complementarities are key; Also implicated are:

- Value capture issues
- Coordination issues
- Co-specialization issues
- Co-creation issues

Subadditivity alone doesn't carry the day

Types of Complementarity: Summary

Type	Representative Authors	Description
Production	Hicks (1970)	A decrease in price of X leads to an increase in the quantity of Y
Consumption	Edgeworth (1897/1925)	An increase in the quantity demanded of X leads to increased demand for Y
Asset Price	Hirshleifer (1971)	Financial arbitrage opportunities are created by foreknowledge of the probable impact of an innovation.
Input Oligopoly	Cournot (1838/1960)	Inputs X and Y will be sold for less if the companies can collude to maximize profits.
Technological	Teece (1986, 1988b, 2006)	Unlocking the full value of an innovation requires additional innovation in one or more horizontal, lateral, or vertical complements; ownership of complements aids appropriability.
Innovational	Bresnahan & Trajtenberg (1995)	Improvements in a GPT increases the productivity of goods in downstream applications.

Capabilities v. contractual perspectives

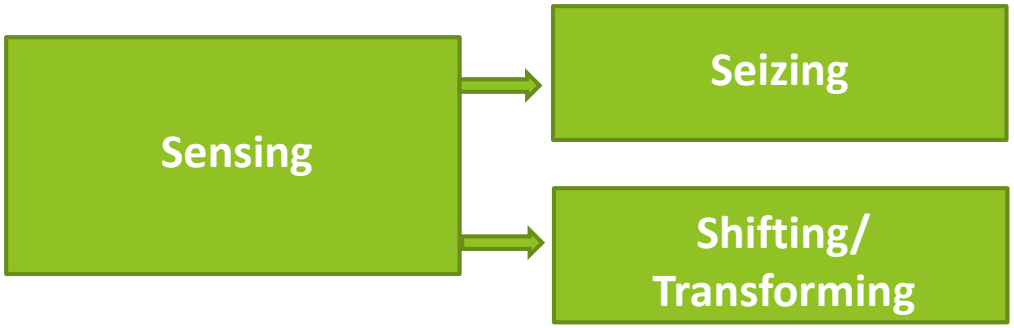
- Rather than stressing opportunism (although opportunism surely exists and must be guarded against), the emphasis in dynamic capabilities is on building (through investment and through learning) unique specialized assets and on keeping the enterprise aligned with its business environment
- The associated activities include research and development, business architecture transformation, asset selection, and asset orchestration

OPPORTUNITY V. OPPORTUNISM: The emphasis in dynamic capabilities is on creating valuable and distinctive assets that transaction cost economics assumes are somehow already available

Many untidy Issues in Dynamic Capabilities

- Seizing is about galvanizing the enterprise and making the investments (and implementing the business models) to embrace new opportunities and guard against threats
- The impact of significant investments behind this modality (seizing) can of course also be transformational and lead to what is tantamount to renewal
- So how does one distinguish between seizing and renewal?

- "Seizing" could be anchored to early stage business evaluation while transformation/renewal could be late stage (mature firm) changes.
- "Seizing" could be scaling i.e. investing to expand existing businesses while transformation and renewal might relate to a change in strategy and the launch of new products. The difficulty emerges because both seizing and transformation first require sensing.
- "Seizing" implicitly assumes that transformation isn't first required. This means (a) the organization is new and/or seizing doesn't require a change in business model (b) the legacy structure of the organization isn't a barrier to success.



Policy Implications

The resources/Capabilities perspectives “have mouthwatering potential implications” (Gibbons, 2005)

Theoretical implications:

- Managers and entrepreneurs have a place in the theory of the firm
- Knowledge and know-how acquisition, transfer and protection also find a natural place in the dynamic capabilities theory of the firm
- Capability building, thin markets and non-tradable assets and asset orchestration form the essence of the firm
- Accordingly, a “transaction cost” problem of a very different kind (from Williamson’s TCE) is center stage.
- Good management is about building capabilities and orchestrating assets

Bad theory places blinders on policy makers

- Economists are very influential on policy
- Policy makers are handicapped by the neoclassical theory of the firm
- Managers are “in absentia” in economic theory, placing too much burden (in the theory) on the price system to coordinate economic activity
- The absence of the manager (in economic theory) leads to conceit with respect to the role of the price system… it takes on an impossible grandiose role
- Economic science cannot aid business and management until a theory of the firm emerges which has knowledge generation transfer and management center stage (jobs and President Trump’s concern about jobs and trade can be addressed)

Policy Implications- economic development

- Dynamic capabilities prioritizes assimilation (capability augmentation) over accumulation(resources)
- Management matters for economic development
  - "Developing countries have a relatively large share of inefficient, poorly managed firms" (Bloom, 2012)
- This suggests that many advisors advance the wrong priorities for development policy
  - If developing countries focus on investment for technical efficiency without consideration of market needs and the building of (dynamic) managerial competences, the d-ineffectiveness of local firms will grow worse and national economic growth will be hamstrung should be a priority

Corporate governance

- The absence of a capabilities perspective (and the primacy of agency concerns) has led to policy myopia. Management's hand is forced by shareholder activists and Sarbane Oxley's "imperatives"
  - Investment in longer term value-enhancing projects is discouraged
- If corporate boards are forced to worry excessively about audit trails and shareholder activists, they become distracted from strategizing, innovation lags and performance will suffers

Capability theory creates room for strategic management scholars to assist in public policy

IX. Concluding remark

Dynamic capabilities as general management systems theory “light”

- “One of many objectives of General Systems Theory is to develop a framework of general theory to enable one specialist to catch relevant communications from others” (Boulding, 1956)
- “There is not much doubt as to the demand for it. It is a little more embarrassing to inquire into the supply”, (Boulding, 1956)

Dynamic capabilities is an effort to build the necessary interdisciplinary framework

One Perspective on Dynamic Capabilities

Banff, June 3, 2017

Birger Wernerfelt

MIT

History of the Resource-Based View (1984)

- Porter (1980) same advice to all
- Game theory: Advice should differ
- Assume that firms are different
- Firms do what they are best at; Ricardian profits in equilibrium

Consistent Dynamics in the RBV

- Resources create an asymmetry in the current output market
- They do the same in the “market” for resources
- Firms should acquire those resources that

  -are worth more for them, or

  -they can acquire at lower cost
- This leads to a new equilibrium
- Can be thought of in a continuous time setting

How Has RBV Affected (Strategy) Research and Practice?

- Barney (1991), Prahalad and Hamel (1990), and Wernerfelt (1984) cited more than 110,000 times
- Impact in strategy, HRM, marketing, and other areas of management
- Major component in business school courses
- Untold numbers of consulting dollars, euros, etc

RBV Other Competitive Arenas

- Sports
- Wars
- Careers
- Games
- Animal behavior

- Ex post obvious?

Dynamic Capabilities: From a Theoretical Perspective

- If resources are defined as “strengths”, DCs are resources
- But unlike resources, CPs primary function is not to help you decide which markets to enter. They are more of a management technique.

(Like other management techniques, you can enter more markets if you are good at it.)

- All firms get the same advice, but it is “hard” to execute perfectly

$\Rightarrow$Profits are Schumpeterian; firms are adapting and improving, but others are on their tail.

<u>It is clear that DCs are important. Why?</u>

Detour: What Do Firms Do?

- A very simple abstract model:

-Define the firm by the employment relation

-Compare two labor contracts:

"I will do x (e. g. book this trip) for you" vs. "I will do any of these *n* things for you"

Assume sub-additivity: The costs of agreeing to the latter contract are less than proportional to the number of services covered (n)

$\Rightarrow$We use the latter, employment, contract when frequent adaptation is needed

So the essence of firms is to adapt (Wernerfelt 1997, 2015, 2016)

Further Detour: The Scope of the Firm

- The sub-additivity argument also applies in the business domain

  -There are gains from specialization in both service and business domains. I can be a full time plumber or a superintendent at 100 Main St..

  - Suppose that 100 Main St. only needs a half time plumber, but that 110 Main St. have the same needs. Now compare the contracting costs of ["I will do plumbing for 110 Main St." and "I will do plumbing for 110 Main St."] vs. "I will do plumbing for the 100-110 Main St. Corp.": It will be cheaper to agree on the latter

  => The two firms might consider merging

  - The argument applies to other inputs (brand names, teams of employees,…resources!) that are lumpy in the sense that it is inefficient to trade fractions of them or to rent them for short periods of time (Teece, 1982; Wernerfelt, 2016, 2017)

- The advantages of using excess capacity inside the firm are acute exactly when inputs have to be redeployed frequently

Why are Dynamic Capabilities so Important?

- Since firms are used, and grow big, exactly where frequent adaptation is important, DCs are going to be valuable for any firm.
- There is a tradeoff between focus and flexibility, but most firms (and people) have a clear bias in favor of focus
- The speed of environmental change is thought to be going up