

Innovation

OIDD614 – Session 5

Karl T. Ulrich

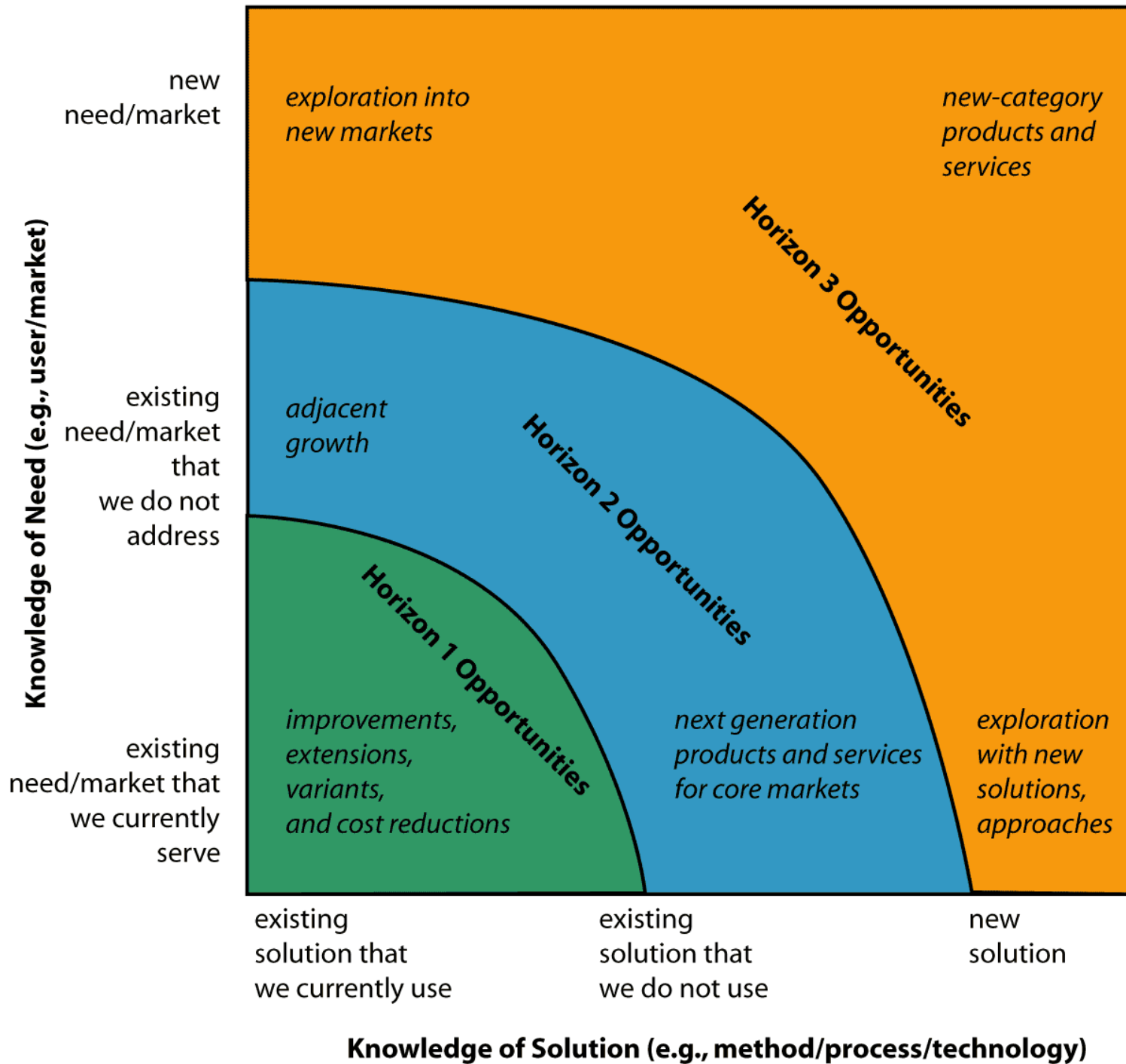
Course Topics

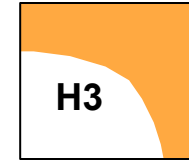
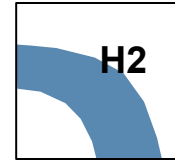
- What is innovation?
- Need pull vs. solution push
- Internal vs. external innovation
- Horizon 1, Horizon 2, and Horizon 3 innovation
- VIDE success model; value = $f(\text{idea, development, exogenous factors})$
- Opportunity identification
- Individual vs. group performance in idea generation
- Problem definition using "5 Whys"
- Innovation tournament structure
- Tournament performance levers: N, mean, variance, filter ratios
- Design thinking: observational methods, rapid prototyping, iterative refinement
- Concept exploration/development methods
- Whiteboard 101 (plus more optional visual expression tutorials)
- Branding and naming
- Crowdfunding and open innovation
- Lean innovation/MVP, project planning
- How to pitch
- Valuing innovation projects
- Culture of innovation
- Entrepreneurial innovation
- (Project-specific content and methods.)

Culture

The set of shared mental assumptions that guide interpretation and action.







Objective

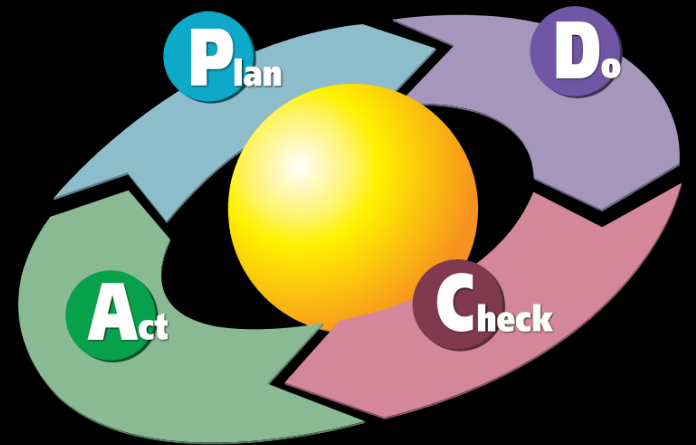
Improvement
(75-90% success)

Adjacent Growth
(25-75% success)

New Category
(<25% success)

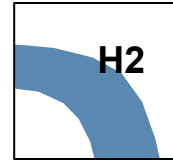
Elements of Culture

- | | | |
|--|--|---|
| <ul style="list-style-type: none"> • Customer focus. • Continuous improvement. • Problem solving. • Measurement, analysis. | <ul style="list-style-type: none"> • Continual generation of opportunities. • Inexpensive exploration of feasibility and value. • Matching of markets and capabilities. | <ul style="list-style-type: none"> • Irrational optimism. • Vivid imagination of possibility. • Adaptive and dynamic planning. • Tenacious commitment. • Enthusiastic tech push. |
|--|--|---|

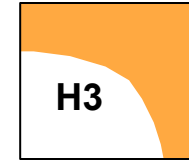




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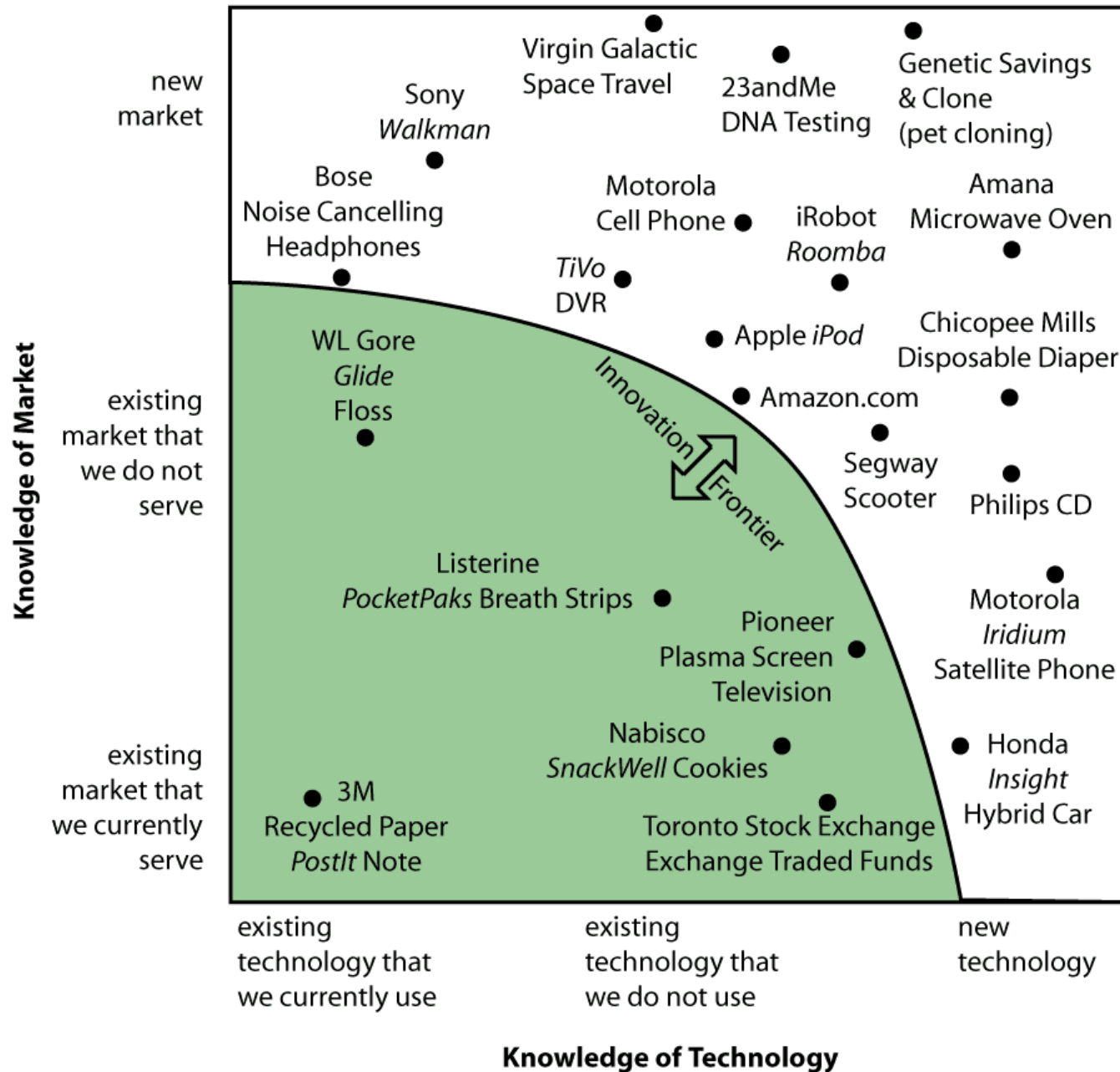
New Category
(<25% success)

Objective

**Elements
of Culture**



Organizations Benefit from Defining an Innovation Frontier



Perspective?

23andMe
vs.
Genentech



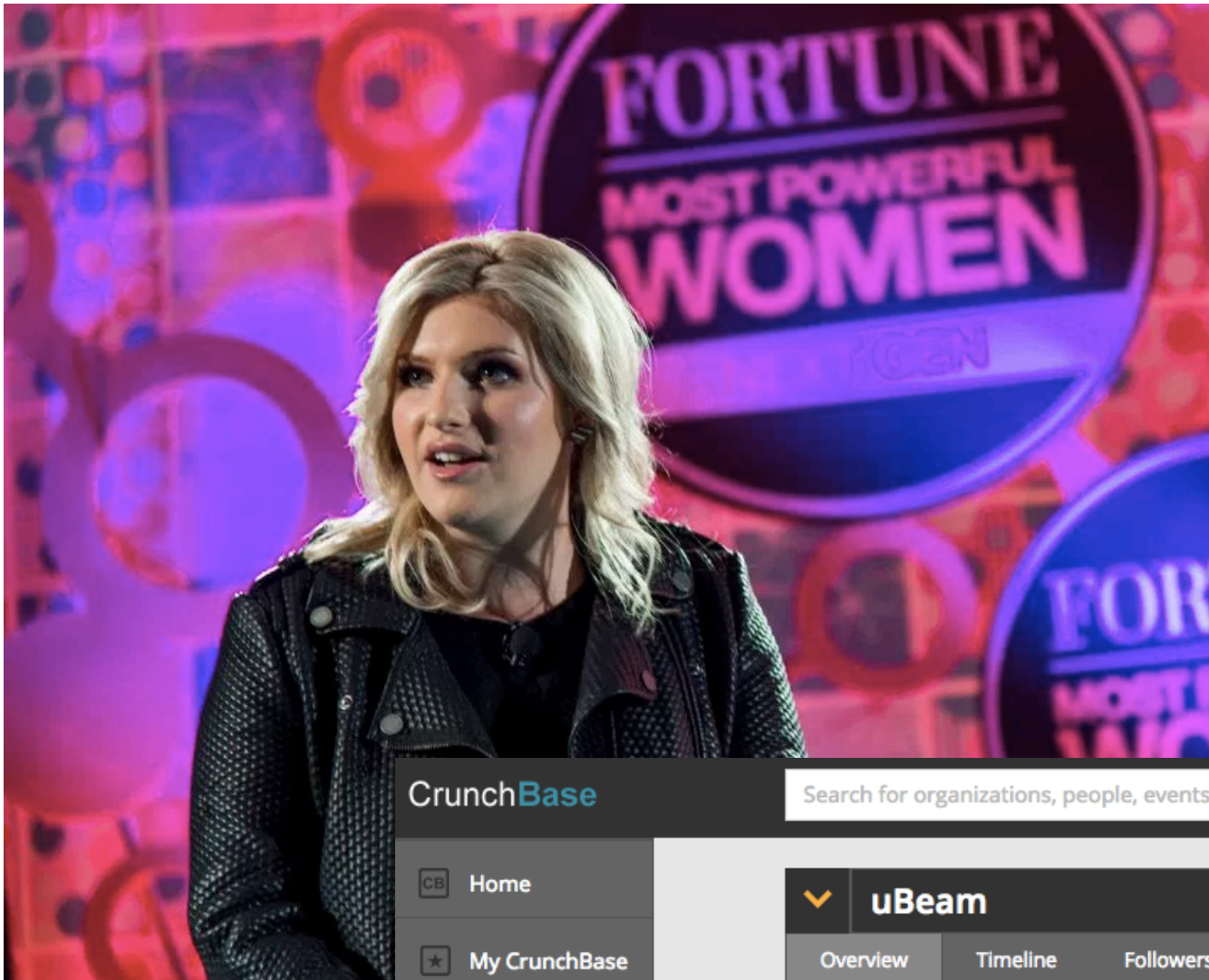
Innovation	Early Commercial Attempts (year)	First Mainstream Product (year)	Leader(s) During Peak Growth Period (year)
Cable television	Panther Valley Cable TV, Service Electric Cable TV 1948	Cox, Westinghouse, Teleprompter ~1960	Comcast, Time Warner, Cox, TCI, Cablevision, MediaOne ~1985
Compact fluorescent light bulb	Philips, Westinghouse ~1980	Philips, Westinghouse, GE ~1985	Philips, GE, Westinghouse, N:Vision, Sylvania ~1990
Disposable diapers	PauliStrom 1942	Chicopee Mills (J&J) 1949	Procter & Gamble, Kimberly Clark 1961
Microwave oven	Raytheon 1947	Amana (Raytheon) 1967	Litton ~1970
Mobile telephone	Motorola 1973	Motorola 1983	Nokia, Motorola ~1991
Mutual fund	Massachusetts Investors Trust 1924	Fidelity Fund 1928	Vanguard Group Fidelity Investments 1977
Personal computer	MITS Altair 1975	Apple II 1977	IBM PC 1985
Search engine	Lycos 1994	Excite, AltaVista, Yahoo! 1995	Google, 1998 Yahoo!, Microsoft, 2004
Television	Telefunken, 1934 Dumont, 1938	RCA 1948	Magnavox, Zenith, Philips ~1960
Video cassette recorder	Ampex 1956	Sony 1971	Matsushita 1976

Source: Terwiesch and Ulrich, Innovation Tournaments, Chapter 8

Is Apple a pioneer; a first mover?







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🔍 Search

⊕ Contribute

📄 Data Export

▼ uBeam

Overview

Timeline

Followers

Contributors

Peter Thiel

Mark Cuban

Marissa Mayer

Andreessen Horowitz



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Overview

Total Equity Funding
\$23.35M in 4 Rounds from 22 Investors

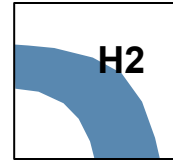
Most Recent Funding
\$2.6M Equity Crowdfunding on December 18, 2015

Headquarters: Los Angeles, CA

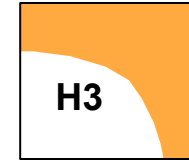




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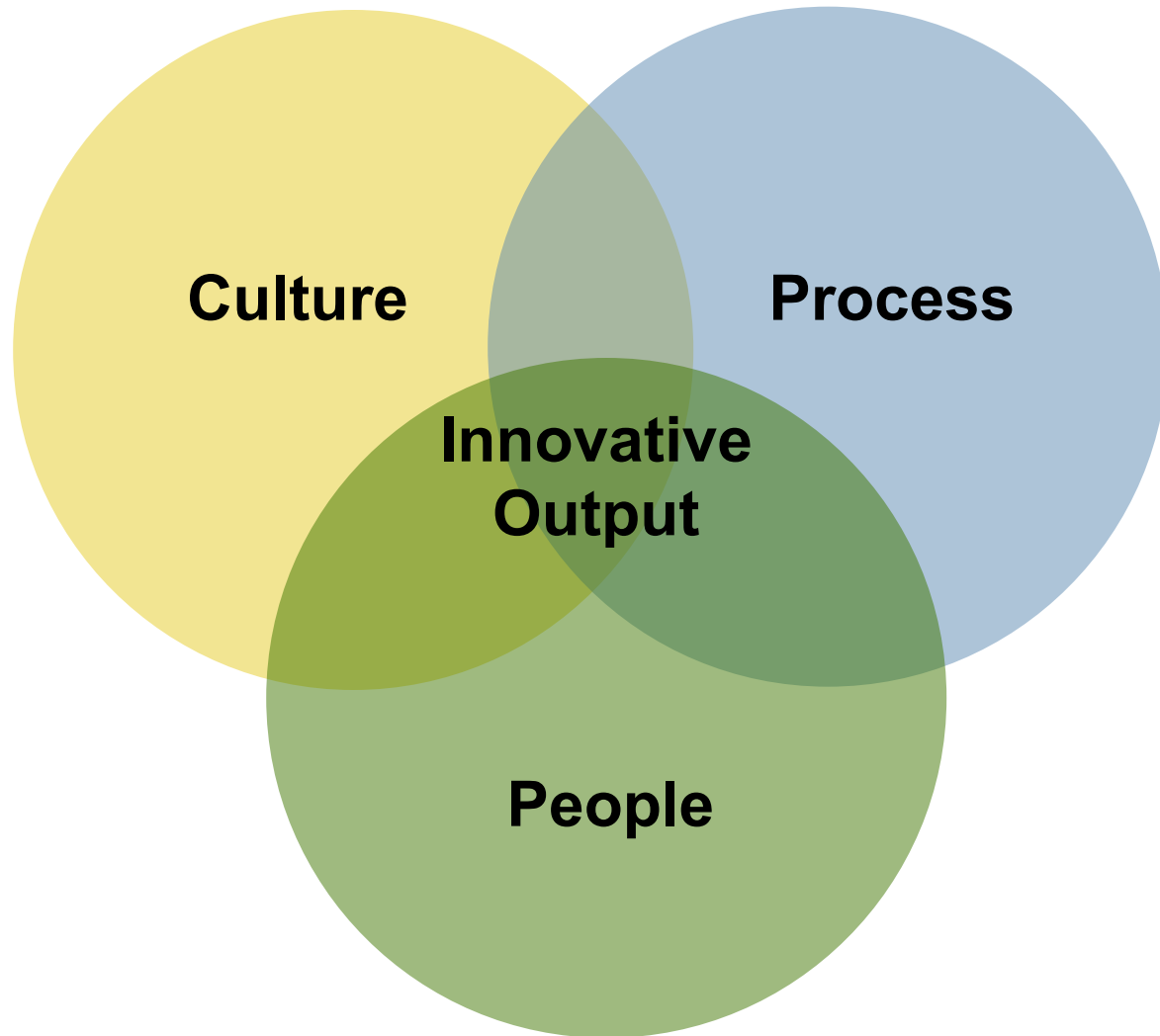
**Elements
of Culture**



Three Cultural Challenges

1. Managerial Risk Aversion.
 - Most managers prefer a 90% chance of 1M USD to a 25% chance of 4M USD.
2. Impossibility of precisely modeling financial return.
 - If we can't precisely quantify the pay-off, we assume the return is low.
3. Many of the most interesting opportunities are at the edges of the organization.
 - But if we are just autonomous units, we can't take advantage of our scale.

Factors Driving Innovation Performance in Organizations



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Innovation

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Wharton Innovation Group

Mission

The Wharton School has been a pioneer in business education for more than 125 years. The Wharton Innovation Group was formed in 2010 to take advantage of the wealth of emerging opportunities for innovation in education and scholarship created in part by globalization and technological change.

Our mission is to catalyze innovation related to all of the school's objectives. We solicit, identify, and create opportunities. We select those that are most promising. We collaborate with the operating units to implement the very best opportunities.

Our community has always innovated, and will continue to do so. The Innovation Group aims to catalyze that organic activity. However, we will also take a leadership role in pursuing longer-term initiatives that span organizational boundaries and whose promise is clouded by significant barriers.

Each

engage the entire Wharton community, and even the public at large, to identify and pursue opportunities for innovation. We make many small investments in exploring opportunities, and encourage members of our community to explore opportunities on their own based on their own enthusiasm. We aim to make major investments in a few exceptionally promising areas.

Leadership

The **Innovation Group** is charged with pursuing medium- and long-term opportunities to improve the performance of the Wharton School with respect to its educational, scholarly, and social objectives. The group is led by Karl Ulrich, Vice Dean on Innovation and CIBC Professor of Entrepreneurship and eCommerce. For more information on Professor Ulrich and the team that makes up the Innovation Group, please see our [About Us](#) page.

On Innovation

 Thomas S. Robertson
Dean of the Wharton School

"Innovation is central to our culture at Wharton. It is a mentality that must encompass every aspect of the School — whether faculty research, teaching or our alumni outreach."

[More »](#)

Karl T. Ulrich
Vice Dean, Innovation

Wharton Professor Karl Ulrich

 0:00 / 1:16 YouTube

1/4 - 1/2 % of revenues for unspecified exploration



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CENTER FOR HEALTH CARE INNOVATION

Accelerating Ideas to Transform Health Care

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Portfolio

The Center for Health Care Innovation is dedicated to reimagining health care delivery for dramatically better health more attainable by improving the quality, affordability, and accessibility of care; and by making it

Learn more about our approach [here](#). Learn more about our projects and collaborative efforts below.

**1/4 - 1/2 % of
revenues
for unspecified
exploration**

s to make better
lives.

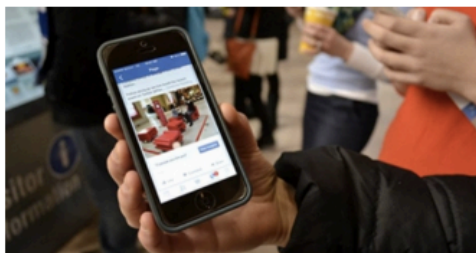
All Projects

Patient Outcomes and Experience

Connected Health

Care Coordination

Enabling Innovation



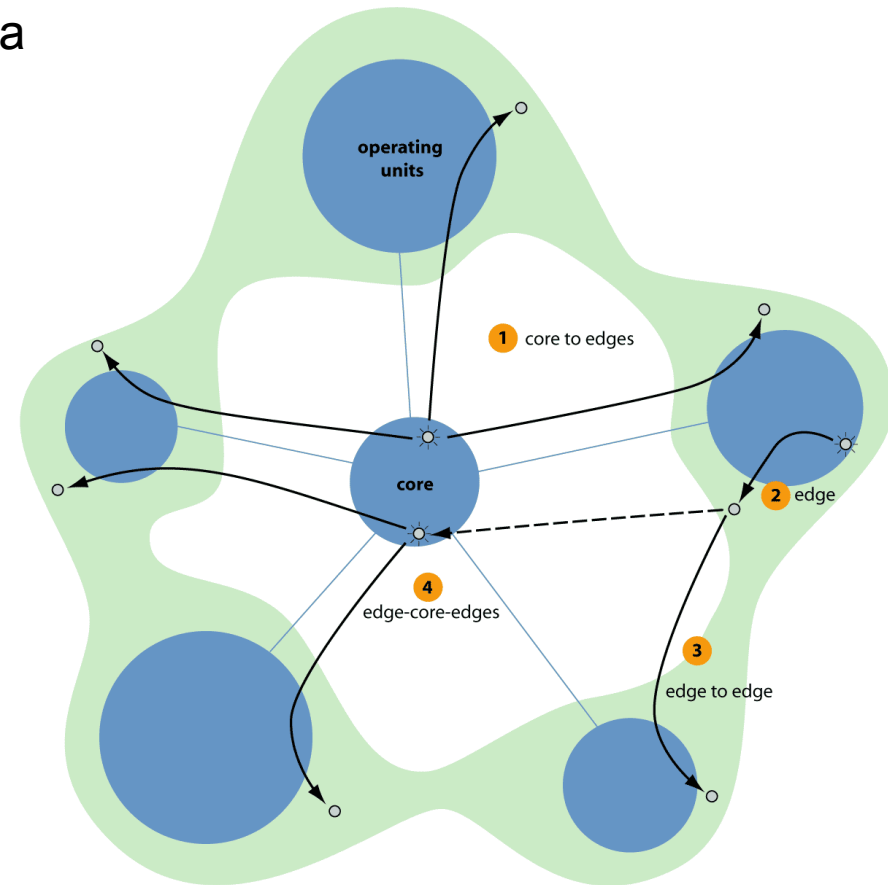
The most terrifying words in the English language are: I'm from the government and I'm here to help.

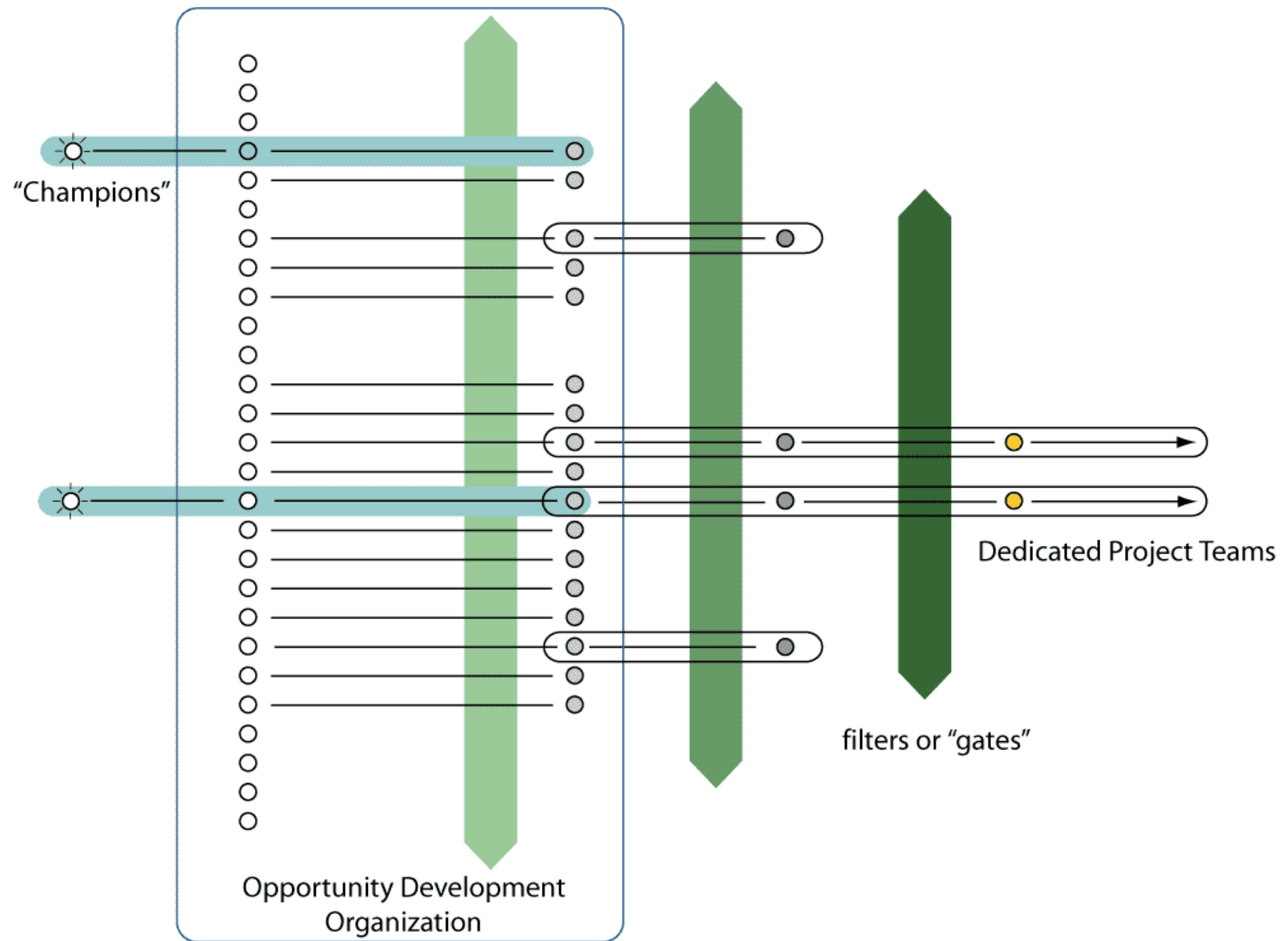
Ronald Reagan



The Importance of the Central Innovation Function

1. Aggregation of opportunities, and a transparent pipeline.
2. Efficient allocation of the $\frac{1}{4}$ - $\frac{1}{2}$ percent investment.
3. Portfolio perspective on success.
4. Managing the tension between autonomy and coordination.





Portfolio Perspective

Hits

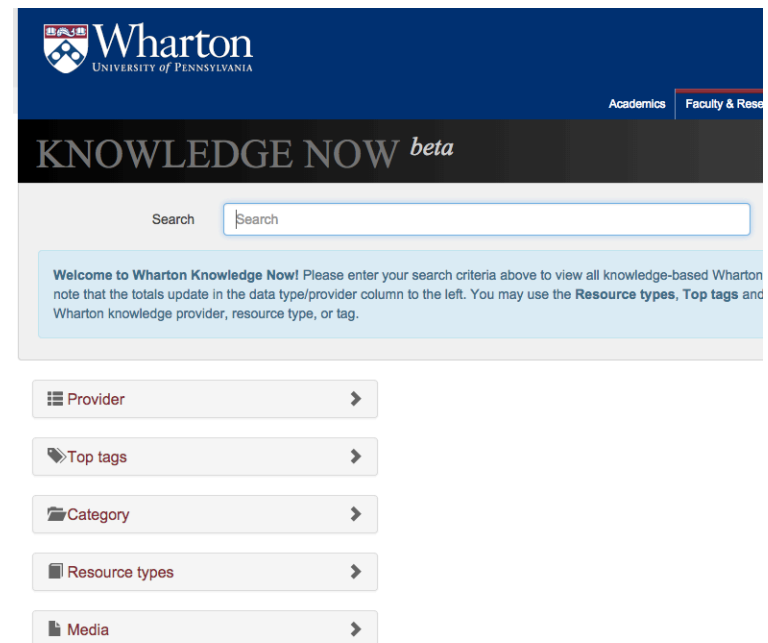
- Semester in San Francisco.
- Wharton Business Radio on SiriusXM Ch. 111.
- Lifelong Learning.
- Massively Open On-Line Courses.
- Wharton Innovation Fund.

Modest Successes

- Knollop school-wide knowledge database and search.
- Skypebot.
- Cisco telepresence classroom.

Failures or TBD

- Brainstorm idea management software.
- Admissions process changes.
- Dean's dashboard.
- Wharton venture fund.



[illegible][illegible][illegible]

1 Week Penn Provider Guarantee
Airline Scheduling for Radiology and Beyond
Almost Home
Artwork for patient rooms and high stress areas
Bereavement room
Community Health Workers
Customer Service Training
Discharge Prescription Concierge Service
Electronic Check In
ER Communication Board
Family room for progress to home
How's the food?
Interactive Map of Hospital
Interactive Patient Way finding
iPads for Patients
IV Team
Personalized Navigation Kiosks
Managing Patient Expectations (Restaurant Buzzer)
My Penn Radio - music for patients
On line patient registration
Online Bill Pay and Statements
Open Access
PaCt Project
Patient centered family videos posted to YouTube
Penn Care Key Medical Card
Penn Medicine Navigation System
Penn Passport - a universal schedule
Penn Transport Link
Penn Virtual Visits
RX at Discharge
Schedule Appointments online (My Penn Scheduler)
Skype
Smart Card
Streamline Medication Reconciliation
Their Big Idea: Patient Innovation Tournament
UPHS Food Service Now
Virtual whiteboard for the patient
Warming blankets
Wayfinding for Patients and Families
Who Are You: Identifying the staff to the patient
Your schedule for the day (what tests are coming up)

- [Almost Home](#)
- [Bereavement Room](#)
- [Discharge Prescription Concierge Service](#)
- [My Penn Scheduler](#)
- [Patient Education Videos](#)
- [Patient Service Kiosks](#)
- [Penn View](#)
- [Their Big Idea](#)
- [Way Finding](#)

YOUR BIG IDEA: Improving the Patient Experience at Penn Medicine.



Almost Home



One Week Penn Patient Guarantee



Discharge Prescription Concierge Service



Bereavement Room



MyPENN Scheduler



Patient Education Videos



Patient Services Kiosks



Their Big Idea



Way Finding

YOUR BIG IDEA: Improving the Patient Experience at Penn Medicine.

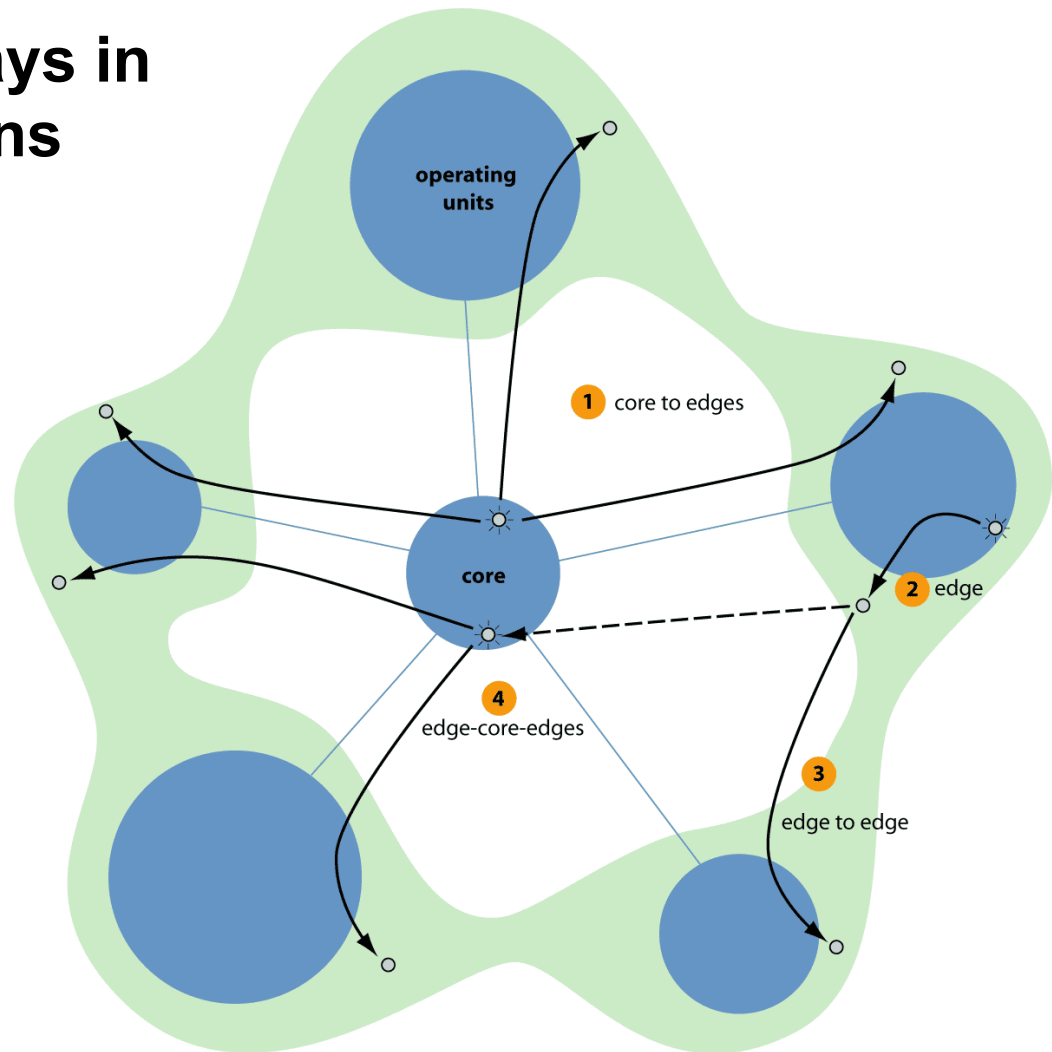
Four Innovation Pathways in Distributed Organizations

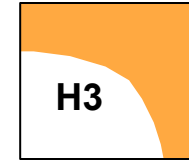
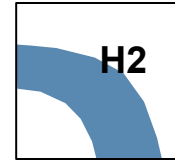
1. Core to the edges.

2. Edge.

3. Edge to Edge.

4. Edge to Core to Edge.





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Improvement
(75-90% success)

Adjacent Growth
(25-75% success)

New Category
(<25% success)

Elements of Culture



Process Levers

- Resources for unspecified exploration.
- Centralized innovation function.
- Transparent pipeline.

Summary

- Fix *Continuous Improvement Process* first (i.e., Horizon 1 processes).
- Define your innovation frontier, probably letting go of Horizon 3.
- Process is the most direct lever on culture.
- If you will pursue Horizon 2 innovation (Adjacent Growth),
 - Make an aggregate, general investment in exploration (e.g., $\frac{1}{4}$ – $\frac{1}{2}$ % of revenues/budget).
 - Assign centralized organizational responsibility for H2 innovation (i.e., an innovation group).
 - Explicitly and transparently manage the opportunity portfolio and pipeline.

