Extreme Teaming: Leading Cross Industry Innovation

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Harvard Business School

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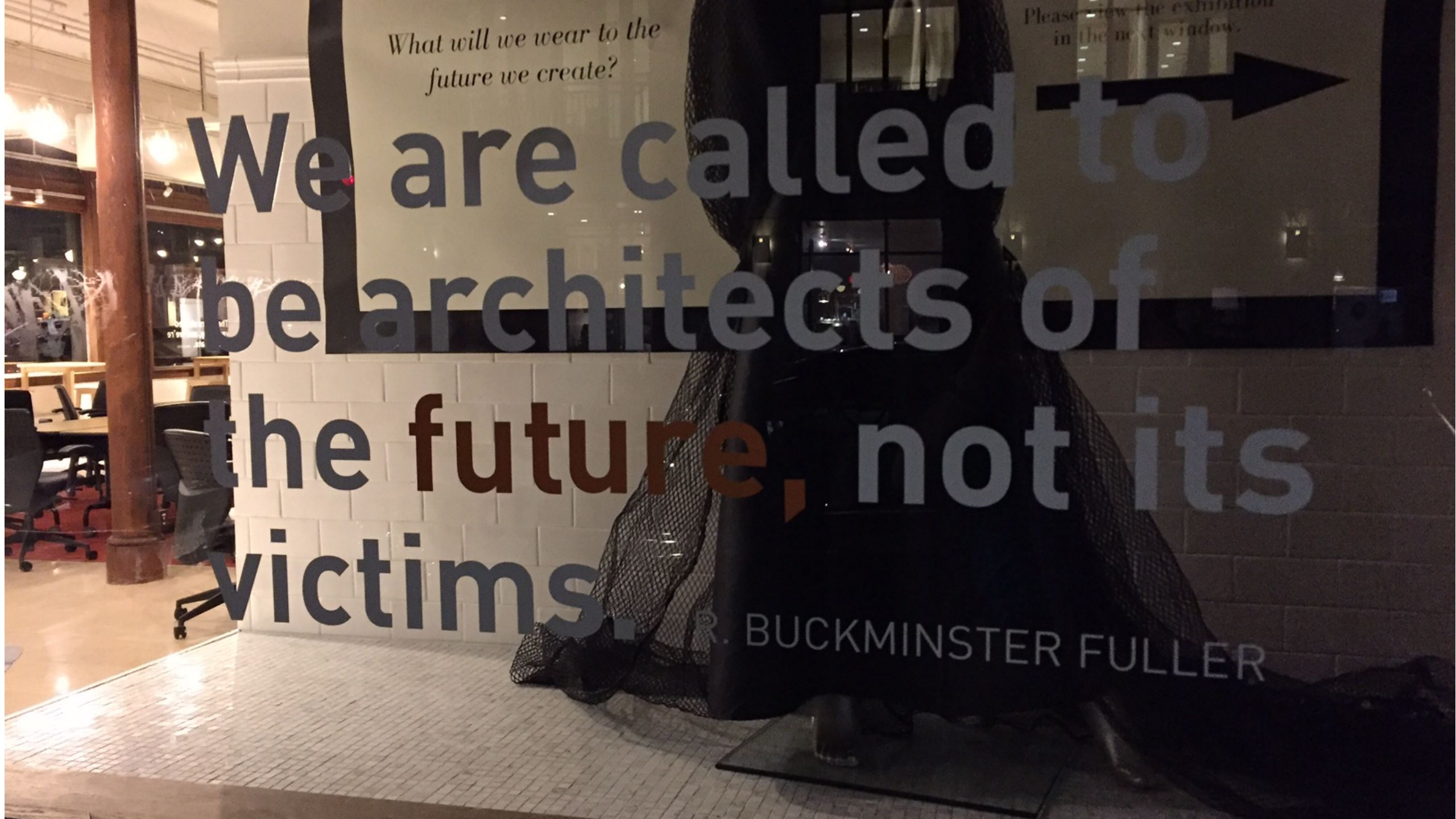

What will we wear to the future we create?
We are called to be architects of the future, not its victims.
R. BUCKMINSTER FULLER

Problems that Call for Cross-Industry Teaming

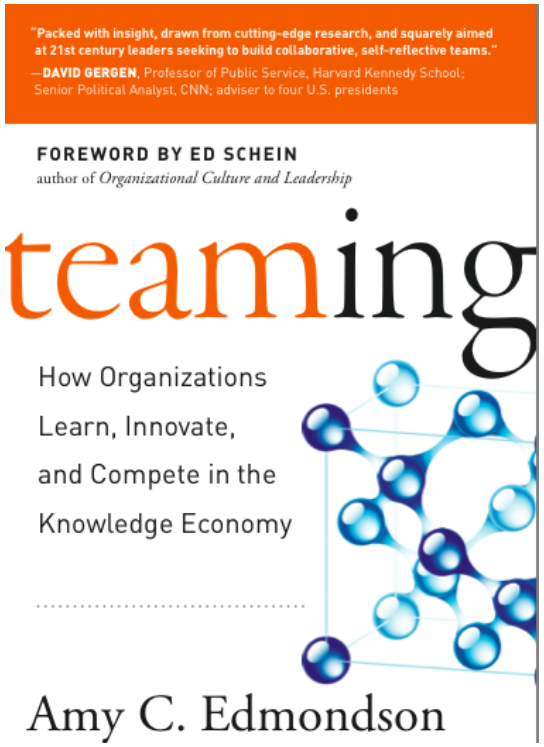
"The issues we face are so big…

and so challenging that we cannot do it alone, so there is a certain humility and a recognition that we need to invite other people in. When you look at any issue such as food or water scarcity it is very clear that no individual institution, government, or company can provide the solution."

Paul Polman, CEO of Unilever, 2012

3 Trends Giving Rise to A Need for Teaming

- The *Knowledge Explosion*
  - no one can know everything… hence
- Narrowed *Specialization*
  - Disciplines give rise to sub-disciplines
- Growth in *Wicked Problems*
  - Inherently multidisciplinary
  - Goals cannot be accomplished by individual experts
  - Requires teaming - flexible collaboration that unfolds over time



Edmondson, A.C. & Nembhard, I.M. (2009). Product development and learning in project teams: The challenges are the benefits. Journal of Product Innovation Management, 26: 123-138

The Promise of Integration

"More and more with these complex issues, it will be about an ecosystem, **bringing people and competencies together from different industries**. It will be less about one company doing it all—it's more about partnerships; it's more about **people who can bridge some of these competencies and can work across different companies**."

-Thierry Martens

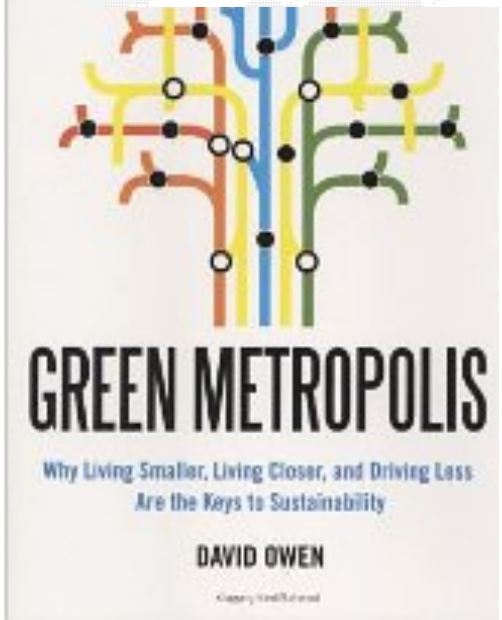
Cisco Executive, in a 2010 interview,

(left Cisco to Join Living PlanIT in 2015).

The Nature of Cross-Industry Innovation Projects

ROUTINE OPERATIONS	CROSS-INDUSTRY INNOVATION PROJECTS
PREDICTABILITY	RADICAL UNCERTAINTY
LIMITED & SIMPLE INTERDEPENDENCIES	COMPLEX NON-LINEAR INTERDEPENDENCIES
CLEAR SHARED CRITERIA	MULTIPLE COMPETING CRITERIA
CLEAR LINES OF AUTHORITY	UNCLEAR AND CONFLICTING AUTHORITY

The Smart-City Industry



"Just as the Internet has transformed our …lives, ***[this will] transform our cities and communities.*** *Everything will be connected, from healthcare to education, government, buildings, physical security and much more.*

Cities that embrace technology will be those who lead in the future, *achieving …environmental, social and economic sustainability."*

—Wim Elfrink, Executive Vice President, Cisco Services & Chief Globalization Officer, Cisco

The Smart City Industry

- **Start-ups** developing technology solutions to make cities “smart.”
- **Products**: connected streetlights, interactive energy meters, wireless energy monitoring/control systems

- **Larger companies** developing platforms to bring together multiple components of smart city infrastructure; services to manage smart city systems.
- **Products**: sensors, smart grids, traffic management systems.

A “Nascent Industry” – Room to Innovate

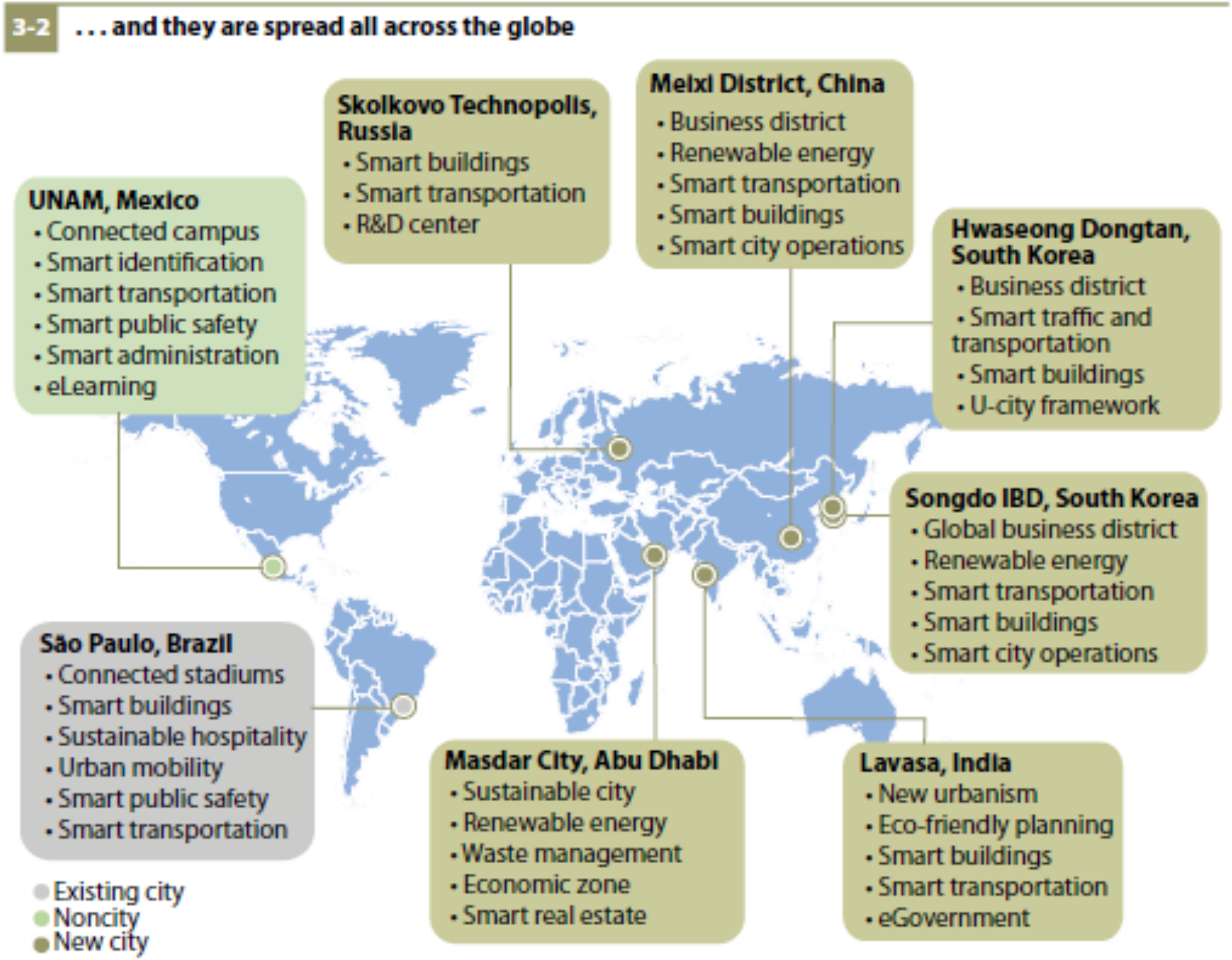
Smart city projects are quite **diverse in their approaches** and objectives…. Smart city is an **umbrella concept** for a variety of systems in a city, from energy and water to healthcare and education. Industry report 2009

The market is **so new** that **no one can pinpoint the exact size** of what's at stake. The best guess… pegs the smart-infrastructure business at $122 billion over the next two years…." FastCo Article 2009

The innovation ten years ago was around green buildings and things like dimmable lights. Now we have moved to talking about smart cities. But **nobody really knows what that means**…. The people who are leading these projects **have never done anything like this before**. And there is **no real research** on what a smart city is.
Buro Happold Engineer, 2010

The Smart City Industry:

Early Eco-City Projects

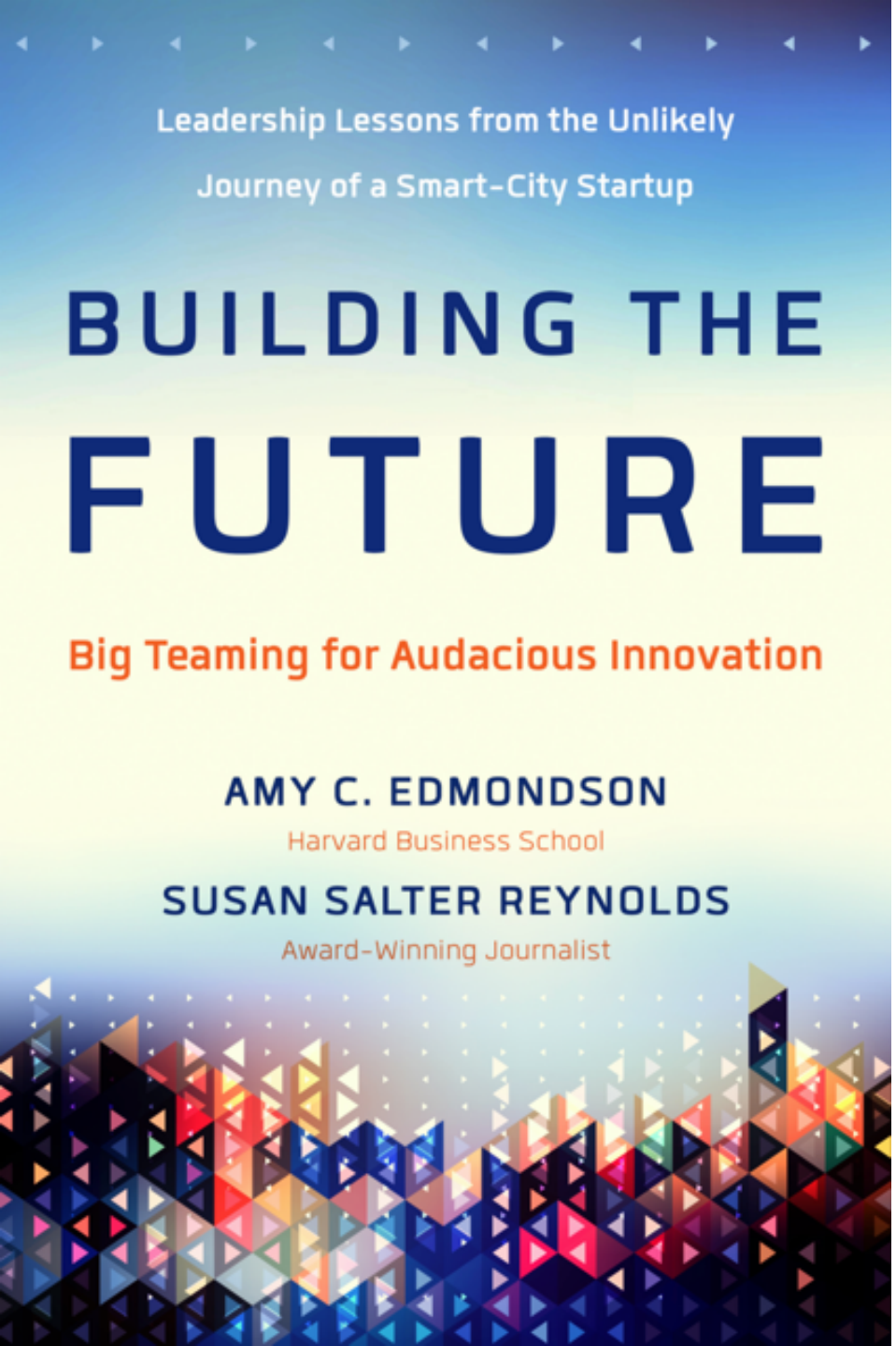


2. Rese

Organizational Learning in New Territory

- Lack of knowledge about customers, preferences, technologies, business models
- The less mature the industry, the more **learning** must dominate **planning**...
- Learning includes:
  - rapid experiments to test hypotheses about products, services, & business models
  - cross-disciplinary collaboration

Smart City Case 1: PlanIT Valley



A Technology Adventure Story

- Prologue: A Citizen of the World
- Chapter 1: Building the future
- Chapter 2: Glimpsing the future
- Chapter 3: Bits & Bytes
- Chapter 4: Location, Location, Innovation
- Chapter 5: Grounded visionaries
- Chapter 6: Rethinking City Hall
- Chapter 7: The Organization Man Revisited
- Chapter 8: Confronting Culture clash
- Chapter 9: Balancing influence & innovation
- Epilogue: What the Future Holds

Smart City Case 2: Lake Nona Medical City

HARVARD | BUSINESS | SCHOOL

N9-613-022
SEPTEMBER 19, 2012

AMY C. EDMONDSON
SYDNEY RIBOT
TIONA ZUZUL

Designing a Culture of Collaboration at Lake Nona Medical City

Thad Seymour, President of the Lake Nona Institute, believed that process and governance decisions would be critical to Lake Nona's success. Seymour had joined the team to develop a 7,000-acre residential and research cluster in Central Florida following a successful career in healthcare and biotech. Like many involved in the project, he had been drawn to its potential to "move the needle" on important scientific, technological and sustainability advances. To realize the community's ambitious goals, Seymour knew that he would have to work effectively with a growing roster of partners across sectors and industries.

The Lake Nona community was spearheaded by Tavistock Group (Tavistock), an international private investment organization with a significant presence in Central Florida. The project aimed to develop a master planned community and innovation cluster focused on biomedical research, clinical care and medical education in a healthy, eco-friendly environment. Tavistock founded Lake Nona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LAKE NONA

CITY OF ORLANDO, FLORIDA · THE CITY BEAUTIFUL

Sanford | Burnham
Medical Research Institute

UCF
UNIVERSITY OF CENTRAL FLORIDA
College of Medicine

TAVISTOCK GROUP

dais

"...it's a very eclectic group of entities. You have a large research university, a private biomedical research foundation, you have a foundation funded as private hospital, a federal organization... The question is how to sift all that out and find something we can do together."

– Member of Lake Nona team

Confronting Culture Clash

The Ubiquity of NEGATIVE ATTRIBUTIONS across Professions

We’re dealing with IT people when it comes to Living PlanIT. And they’re different. We actually have to build things…."

Project Manager, Quintain Construction

He is not your typical real estate developer. I meet too many people from real estate who haven’t got a bloody clue."

Living PlanIT CEO and founder, praising Quintain Real Estate CEO

They don't necessarily tell us everything. And sometimes when they tell us things, we don't necessarily fully understand all the ramifications of it because we don't speak quite the same language in just the same way that, when we tell them stuff, they don't always quite understand the ramifications”

Lead software Developer at Living PlanIT, talking about Real Estate Firm

Dimensions of Difference

Values, timeframes, norms, education, risk tolerance, & more

Teaming across Industries: Different Time Frames

The industries we are [teaming with] – real estate, construction, and retail –are very conservative, with **long decision cycles**. I came from automotive, where long is six months! It has taken 19 to 20 months just to *begin* the project in Copenhagen.

John Stenlake, Chief Technology Officer, Living PlanIT

Teaming across Industries: Different Norms

They …drive me nuts... One of my pet hates of Living PlanIT is the culture of the organization – their **time keeping** is atrocious. The only thing they're quick to do is make a promise. They're very slow to deliver. And it drives me absolutely nuts because **I find it terribly frustrating and terribly uncourteous.**

Peter Van Manen, President, Mclaren Electronic Systems

CROSS-INDUSTRY TEAMING CHALLENGES

Technical: Knowledge & Skills

People take the norms and values and incentives within their professions, organizations, or industries for granted, sharing a set of largely unquestioned assumptions

Knowledge is localized (language), embedded (interpretation), and invested (interests).

Psychological: Relationships & Emotions

People tend to perceive members of dissimilar groups as less trustworthy

As a result, people tend to be more hesitant to speak up and express their concerns or ideas, as that would put themselves at risk in front of other team members they do not know well

Four Leadership Levers

LEADERSHIP LEVERS	Technical Focus on systems for interaction	Psychological Focus on emotions
Motivational Channel energy	4. **Encourage collaborative iteration** Support test-and-learn approaches and invite debate on project requirements	1. **Foster an adaptable vision** Appeal to personal values, invite input on the vision, and celebrate change
Enabling Remove barriers	3. **Enable knowledge sharing** Align professional values and colocate experts	2. **Promote psychological safety** Give permission for risk taking and encourage social bonding

From: Edmondson, A. C. (2016) "Wicked Problem Solvers: Lessons from Successful Cross-industry Teams." *HBR* 94, no. 6 (June): 53–59

“We don’t come to our partners with specifics about what we want from them, but [rather] try to paint a picture of what we’re doing...”

-Member of Lake Nona Team

ADPATABLE VISION

"Thad provided the **overview** of what the **mission** and **vision** was **for Lake Nona**. I took it from there… I was able to envision what GE's contribution could be …."

-Leader of GE Team at Lake Nona

ADAPTABLE VISION

1. FOSTER AN ADAPTABLE VISION

Instead of an unwavering compelling vision of what the project hopes to achieve, design the vision to adapt and evolve…

Make VALUES explicit

INVITE input and expect and celebrate change

Impression Management is Second Nature

NO ONE WANTS TO LOOK:	IT'S EASY TO MANAGE!
IGNORANT	DON'T ASK QUESTIONS
INCOMPETENT	DON'T ADMIT WEAKNESS OR MISTAKE
INTRUSIVE	DON'T OFFER IDEAS
NEGATIVE	DON'T CRITIQUE THE STATUS QUO

Psychological Safety

Psychological safety is a belief that one will not be punished or humiliated for speaking up with ideas, questions, concerns, or mistakes.

Recent Research at Google:
Explaining Team Performance

"Psychological safety was far and away the most important of the five dynamics we found -- it's the underpinning of the other four."

What Google Learned From Its Quest to Build the Perfect Team

New research reveals surprising truths about
why some work groups thrive and others falter.

By CHARLES DUHIGG Illustrations by JAMES GRAHAM

When Rozovsky and her Google colleagues encountered the concept of psychological safety in academic papers, it was as if **everything suddenly fell into place**.

One engineer, for instance, had told researchers that his team leader was "direct and straightforward, which creates a safe space for you to take risks." That team, researchers estimated, was among Google's accomplished groups. By contrast, another engineer had told the researchers that his "team leader has poor emotional control." He added: "He panics over small issues and keeps trying to grab control. I would hate to be driving with him being in the passenger seat, because he would keep trying to grab the steering wheel and crash the car." That team…did not perform well.

NYTimes Magazine, February 28, 2016

Is your team in 'psychological danger'?

Lowering Legal Risks at FUJITSU and TechShop

Edmondson, AC, Harvey, JF. 2016. *Open Innovation at Fujitsu* (A) (B), HBS Case No. 616-034.

Social Bonding in New Songdo's Charrette

Building Innovation at Terrapin Bright Green (2013). HBS Case 9-613-093 (with S. Ribot and M. Saunders).

2. PROMOTE PSYCHOLOGICAL SAFETY

Create a team environment where people can offer crazy ideas, admit errors, and openly disagree without fear of ridicule or punishment....

Acknowledge the EXPERIMENT

Lower LEGAL risk

Enable SOCIAL BONDING

Learning from others isn't easy

With the greatest respect to these guys, we're dealing with IT-based people, which is a very different world. **You've only got to read *The Facebook Effect* to realize how different a world it is for people like us.** At the end of the day, in the IT world, all they've got to do to make their good idea marketable is rent some space, and that's pretty cheap. What these guys would like to do is go and build some buildings, and that ain't cheap.

Real Estate CFO

A project manager …must speak many languages—geeks have a way of talking, city planners have another way, civil engineers (slower), IT (anything is possible). There are many different animals around the table!

…[they have] different business models; different ways of building; different materials… different management…

Rosy Lokhurst, Project Manager, Living PLanIT

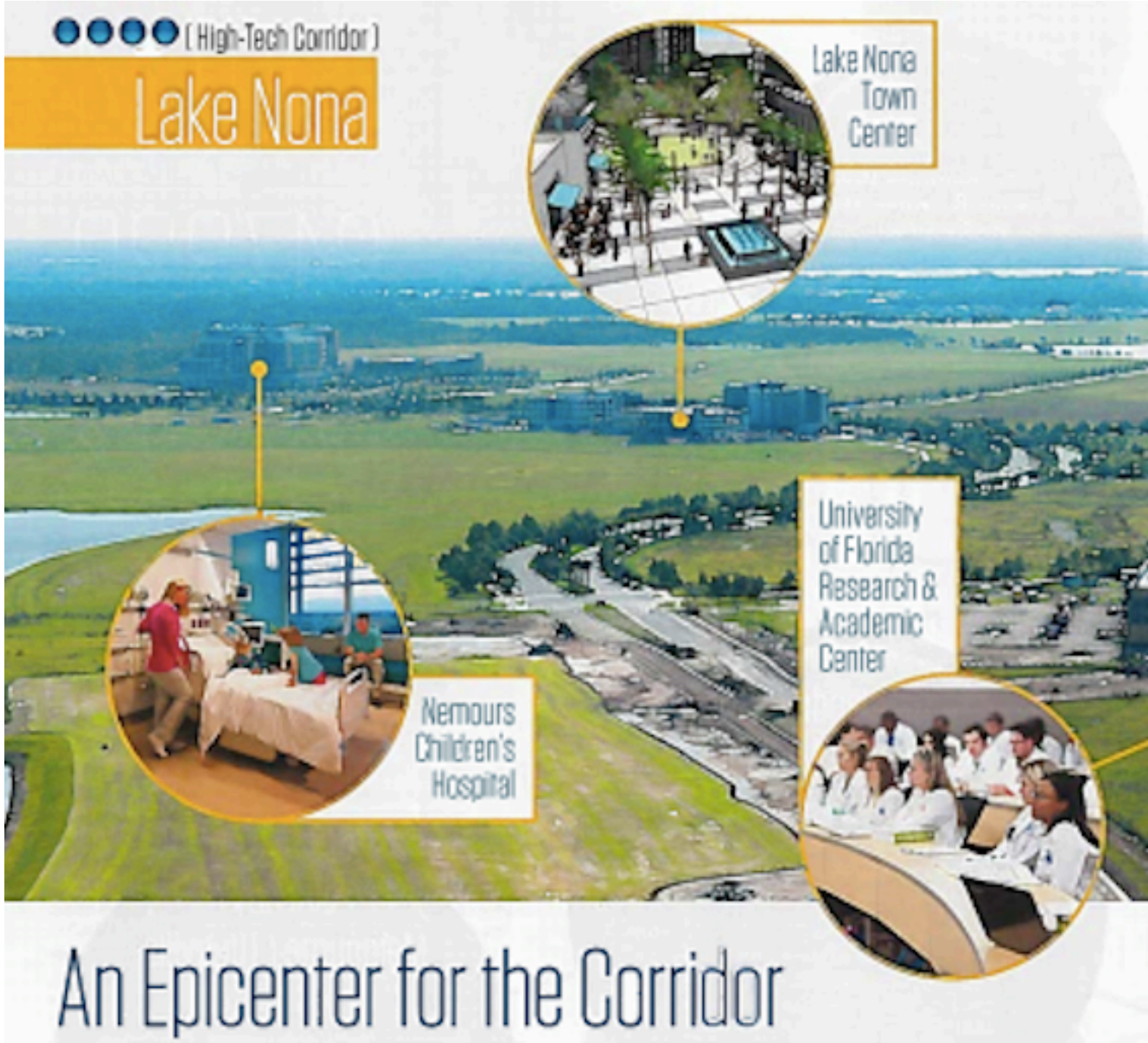
The gulfs between people in different organizations are much larger than those between people in different departments

Closing the gaps takes patience and practice

Patience and Practice

"We encourage other developers to collaborate – to look at their **competitors as partners** they can learn from, because they all face the same difficulties and constraints. (This isn't how developers work but it is the way they should be working)."

– Member of Lake Nona team

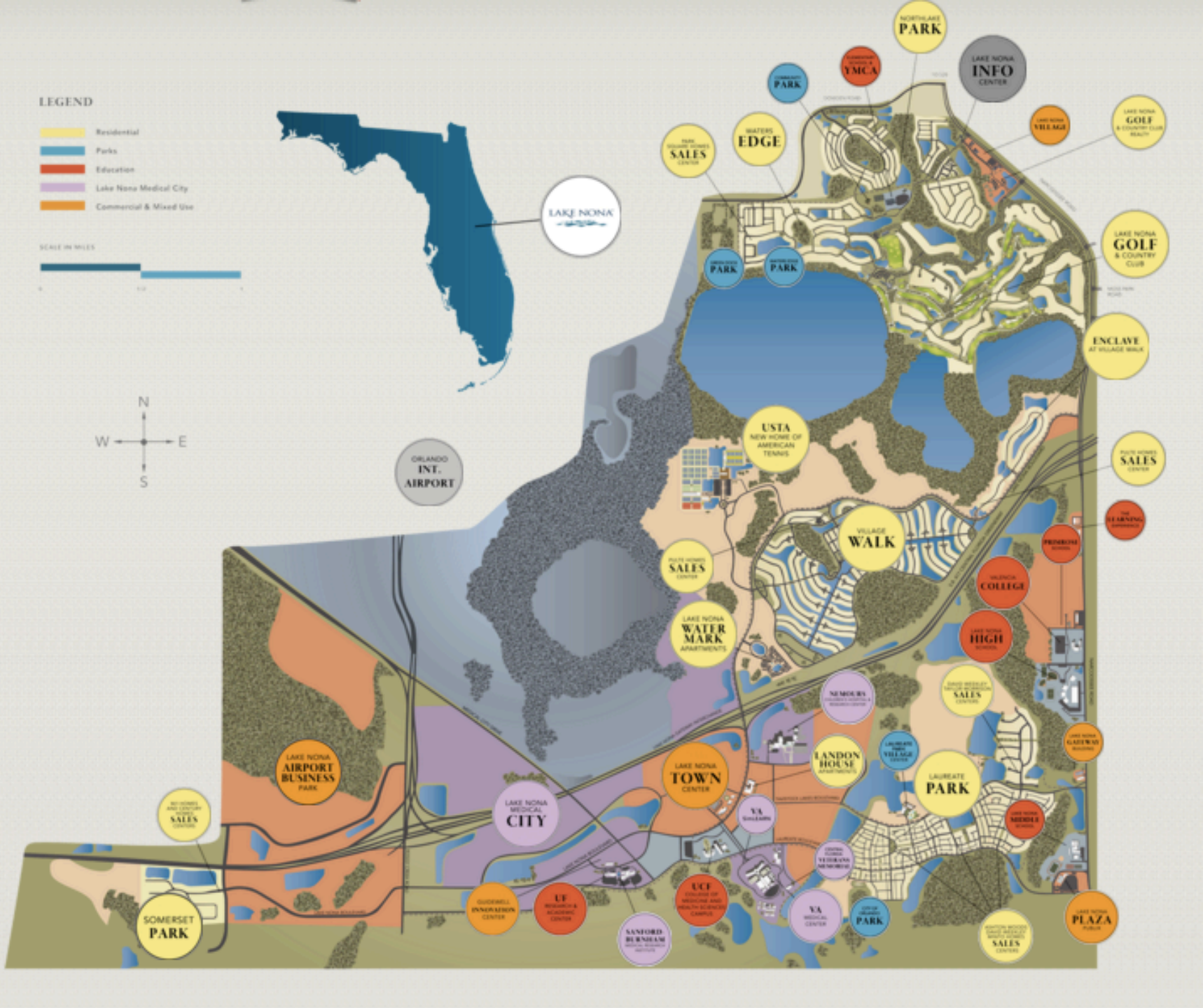


Patience and Practice

"**We rub off on each other**. I 'm trained as a geographer. I've been in city planning my whole career… We bring our **value sets** and our training with us.... I've learned an incredible amount –and I hope the guys on our team have come up a nut or two from me…

We've developed a hybrid language – I see myself using terms that I didn't know 2, 3, 4 years ago ... I hear those guys talking about spatial relationships and form and function of buildings in relationship to the street… **We've kind of built our own vocabulary**…"

– Urban Planner, Lake Nona



Creating Shared Language

"I think we've evolved [to talk] very much in the **same language** as urban designers, architects, and landscape architects. We're beginning to much better understand the urban environment, what makes a good urban environment and what doesn't..."

-Andrew Comer, Principal at Buro Happold Engineering, discussing Living PlanIT

3. ENABLE KNOWLEDGE SHARING

Knowledge sharing across professional domains doesn't happen automatically; relationships across boundaries must be enabled and cultivated.

Emphasize professional VALUES

Enable FACE-TO-FACE interaction

Create shared LANGUAGE

A New Mindset

EXECUTION-AS-EFFICIENCY	EXECUTION-AS-LEARNING
Leaders have the **ANSWERS**	Leaders set **DIRECTION** (strategy)
STABLE work processes are put in place	**TENTATIVE** work processes are seen as experiments
IMPLEMENTING CHANGE is a huge undertaking	**CONSTANT SMALL CHANGES** are a way of life
Feedback is **ONE-WAY**	Feedback is **TWO-WAY**
Employee judgment is **DISCOURAGED**	Employee judgment is **ESSENTIAL**
Fear (of the boss) is **NORMAL**	Fear inhibits **EXPERIMENTATION, ANALYSIS**, and **PROBLEM SOLVING**
GOAL Get Results Today!	**GOAL** Innovate to Build Value over the Long Term

Iterating at Haiti Hope: From Cooperatives to PBGs

Edmondson, AC, Harvey, JF. 2016 *Haiti Hope: Innovating the Mango Value Chain*, HBS Case No. 616-040.

Types of Project Changes:

1) Avoidable
2) Unforeseeable
3) Arguable

Interior of Autodesk's award-winning Boston headquarters

Rashid & Edmondson (2009) *Integrated Project Delivery at Autodesk.* HBS Cases # 9-610-016, 17, 18

4. FOSTER EXECUTION-AS-LEARNING

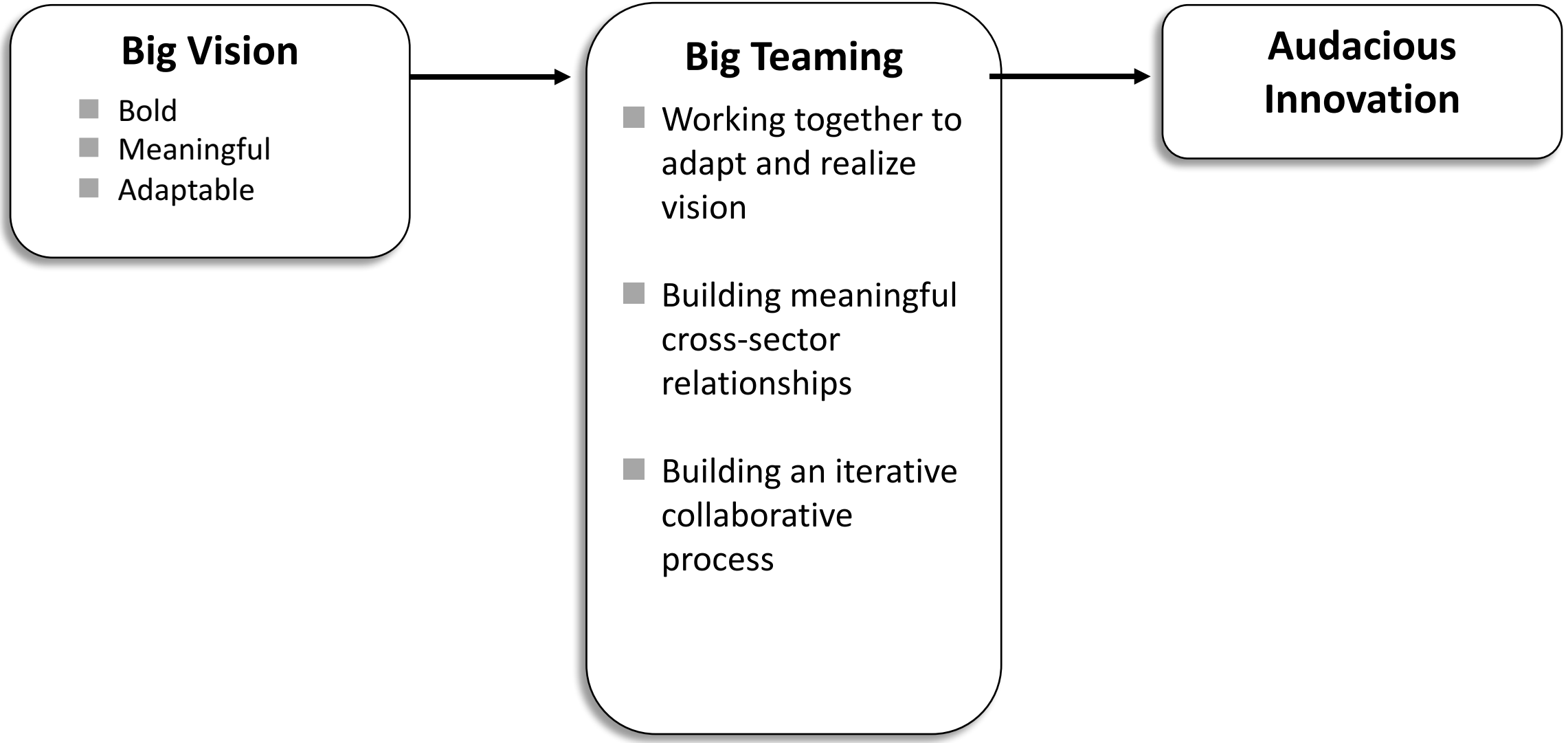
On any complex project it's tempting to fall back on the blueprint approach to management that works well when tasks and interdependencies are well understood…but experimentation to navigate forward is crucial in cross-industry innovation projects

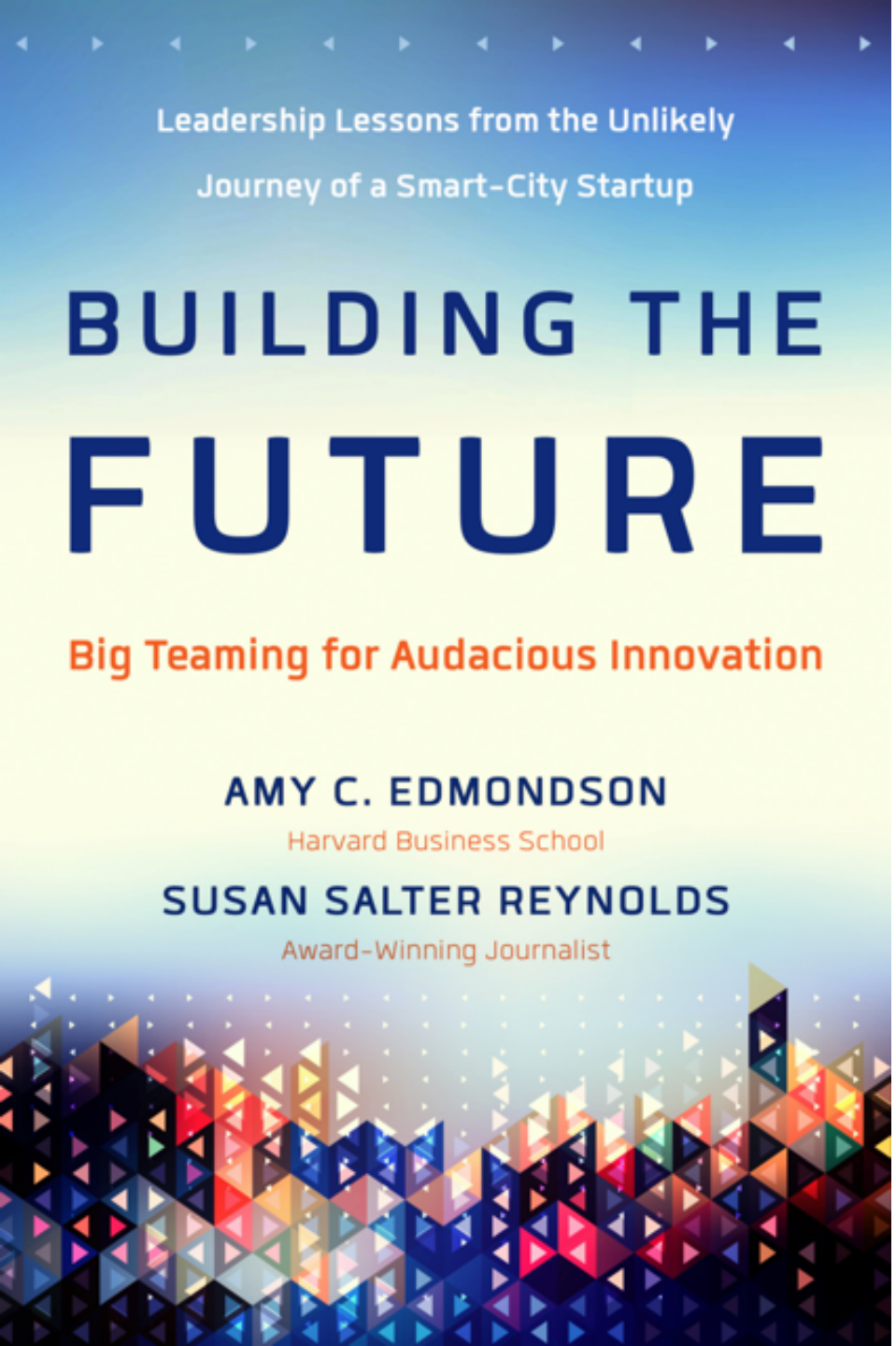
TEST and learn

Embrace SMALL ACTION

WELCOME ”arguable” changes

Audacious Innovation: What does it take?





Thank You!

To Learn More:

Building the Future: Big Teaming for Audacious Innovation

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