

JETRO Japan-US Symposium: Open Innovation Best Practices

Stephen Hoover, CEO
PARC, a Xerox Company

PARC: Pioneering change for over 40 years...

Xerox PARC



laser printing



PC - Alto



Ethernet



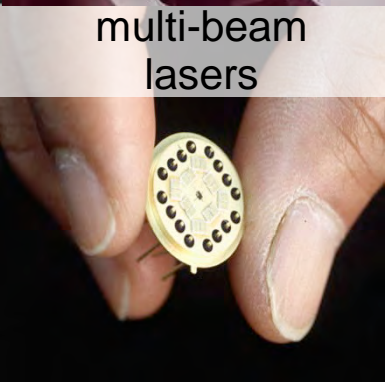
WYSIWYG GUI



programming languages



multi-beam lasers



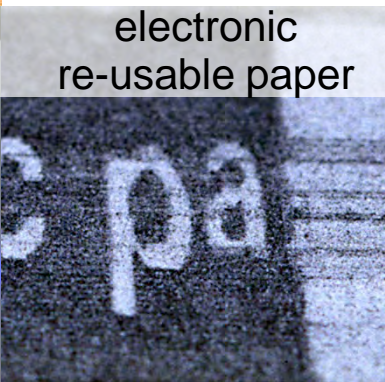
ubiquitous computing



blue laser



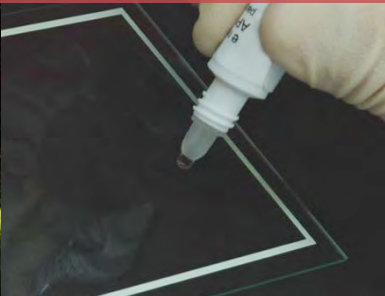
electronic re-usable paper



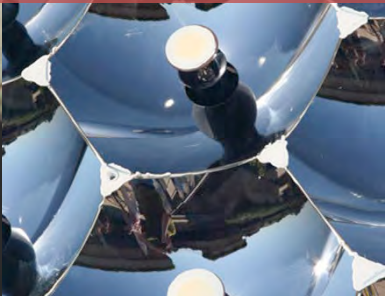
PARC, a Xerox company



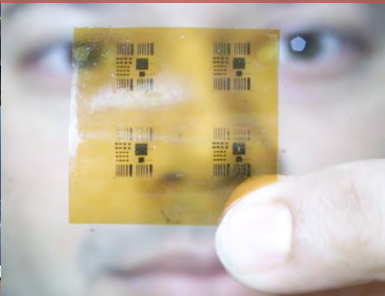
biomedical systems



cleantech



printed, flexible electronics



content-centric networking



“The Business of Breakthroughs[®]”

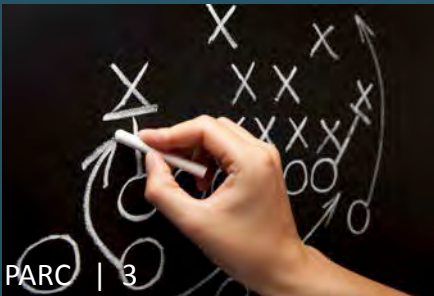
We create innovations with significant world impact by:



1. Invest in key future technology domains

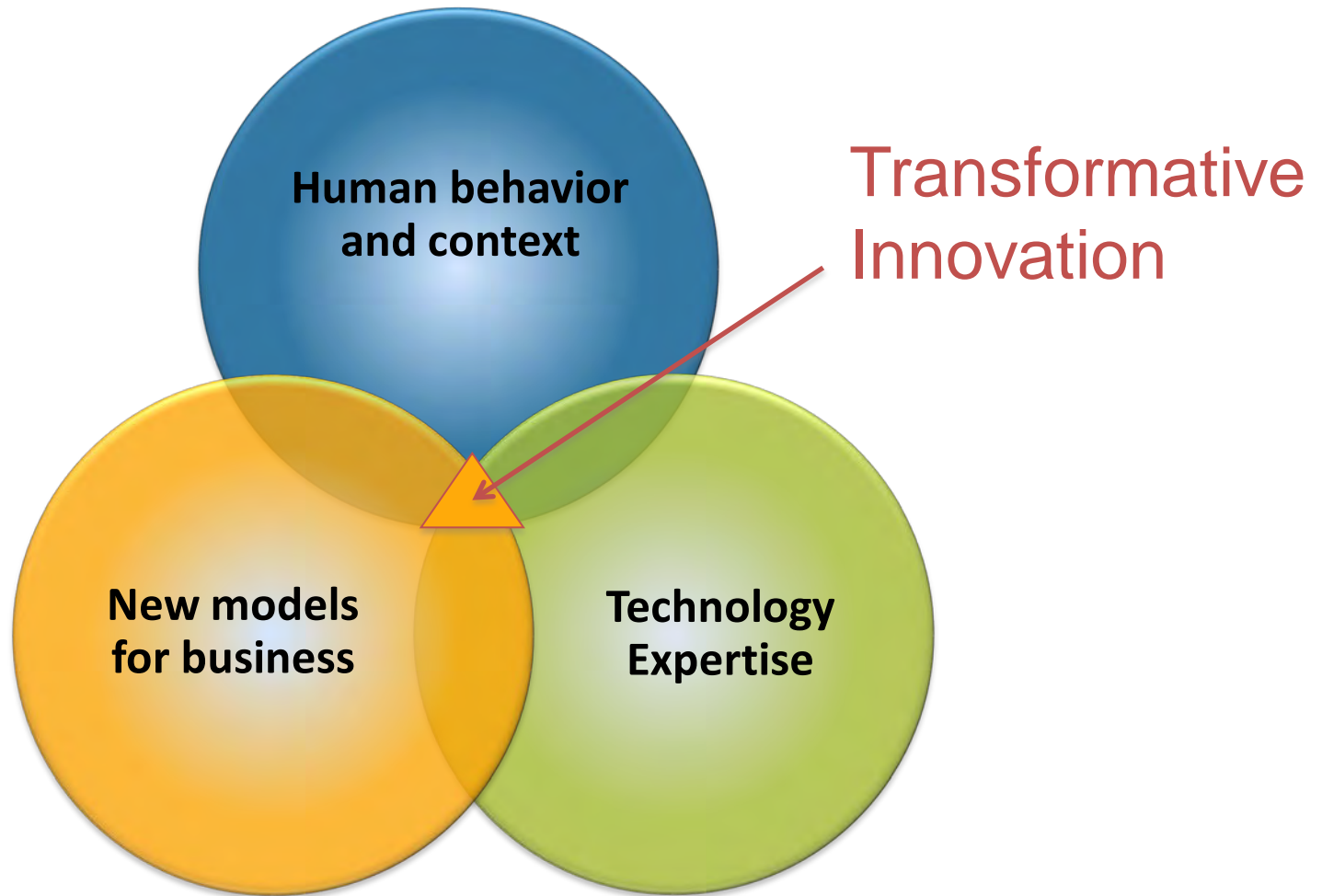


2. Collaborate with our customers via Open Innovation



3. Deploy repeatable innovation process to drive business results

For transformative innovation...



Innovation Best Practices...

User needs *and* technology driven

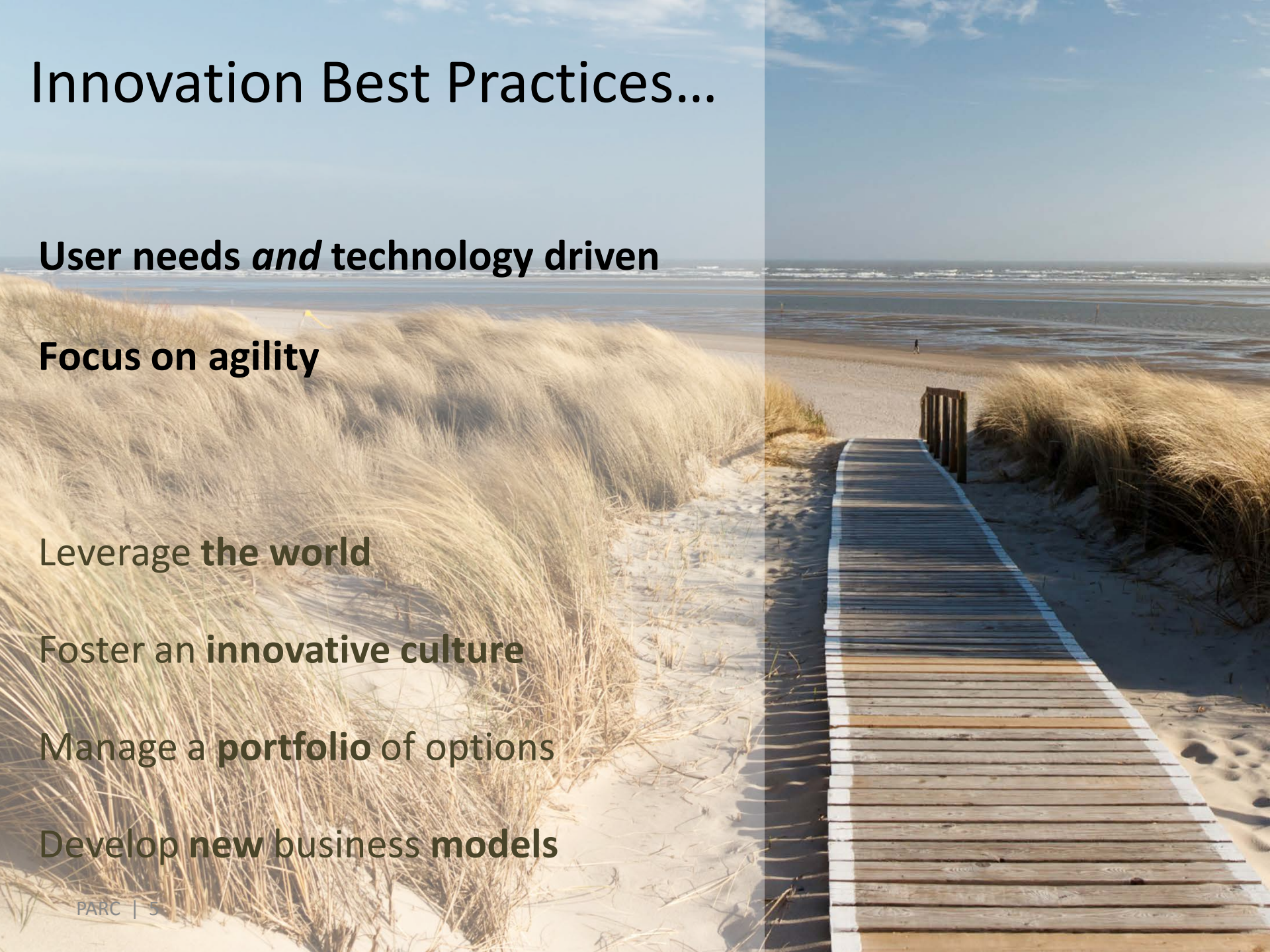
Focus on agility

Leverage the world

Foster an **innovative culture**

Manage a **portfolio** of options

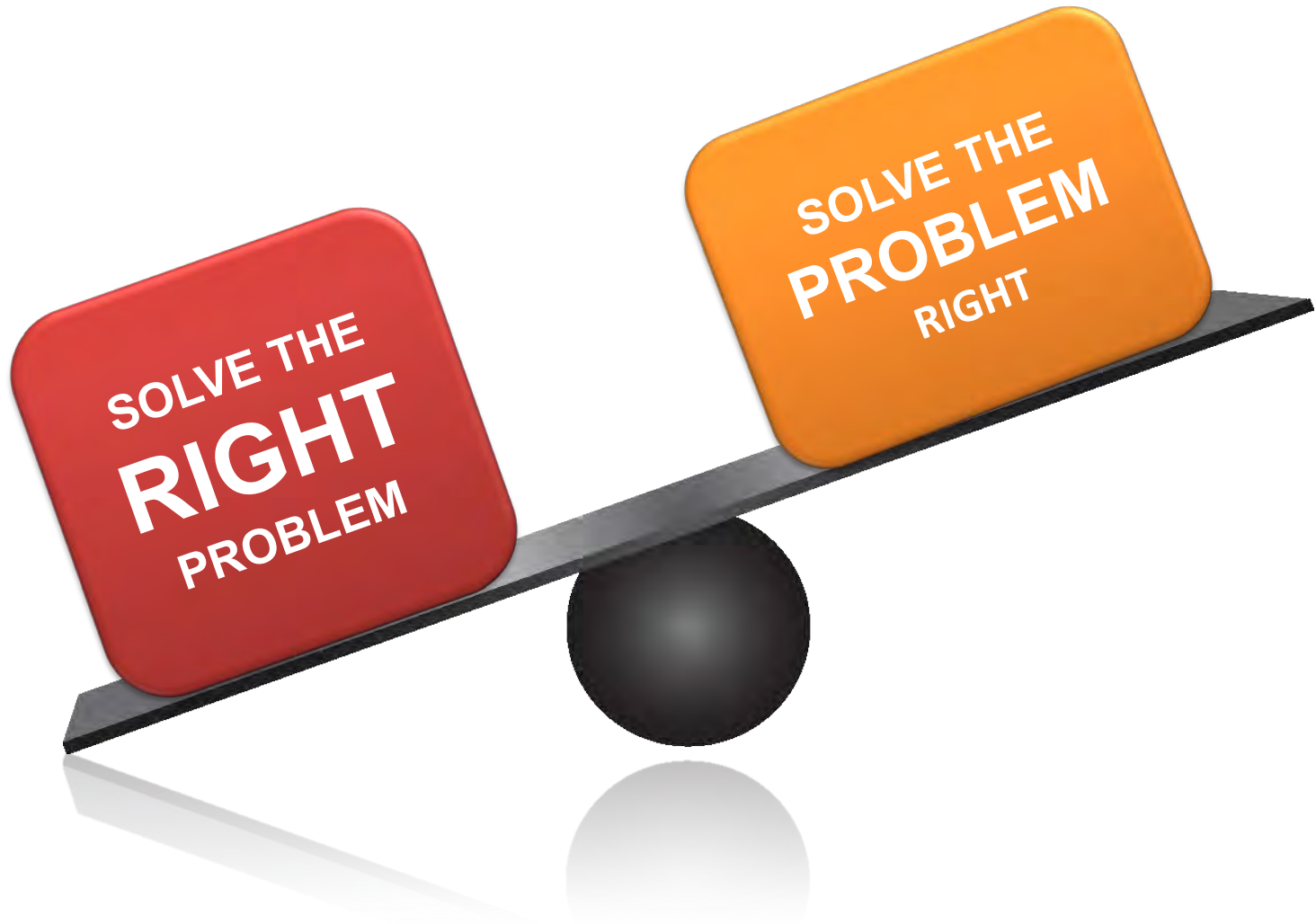
Develop **new business models**



Focus on people...not *just* technology



Identify implicit need



Listen closely to customers

- just *don't* always *do what they say*

What people *say*
what people *do*
and what people *say they do*
are entirely different things.



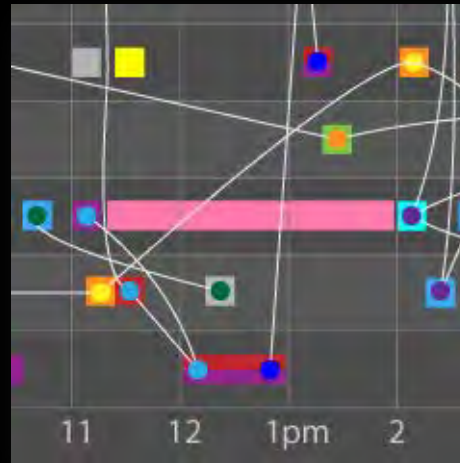
--Margaret Mead

Ethnography and beyond

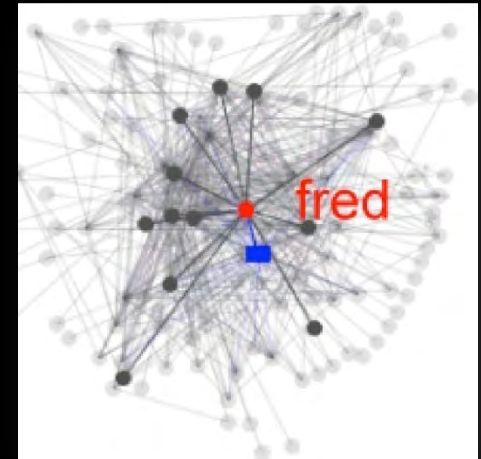
Rapid methodology



User modeling



Social & web analytics



- Video observation/analysis methods
- Participation, in-situ interviews
- Co-analysis and co-design

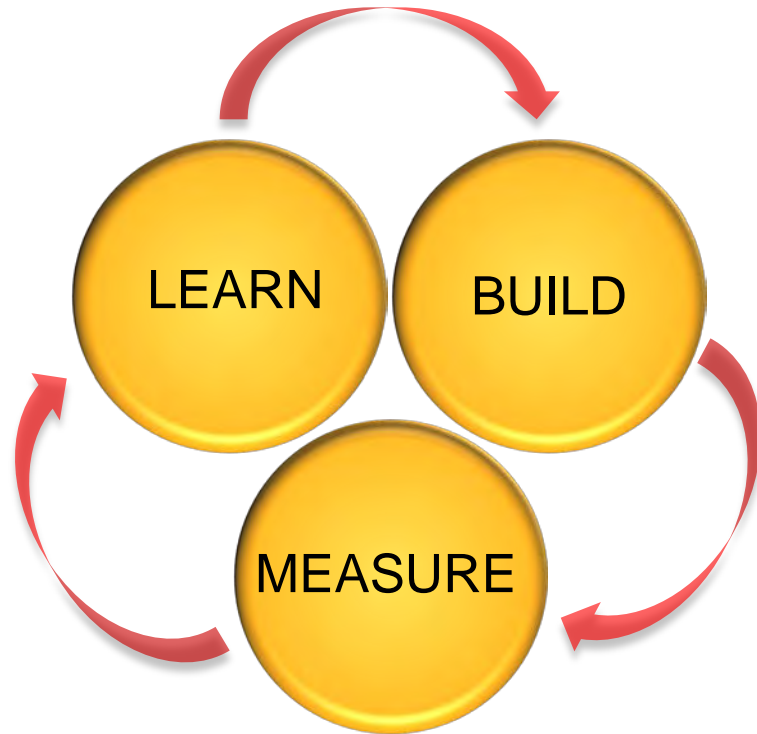
Innovation is a learning process



- is hitting a dead end a failure?

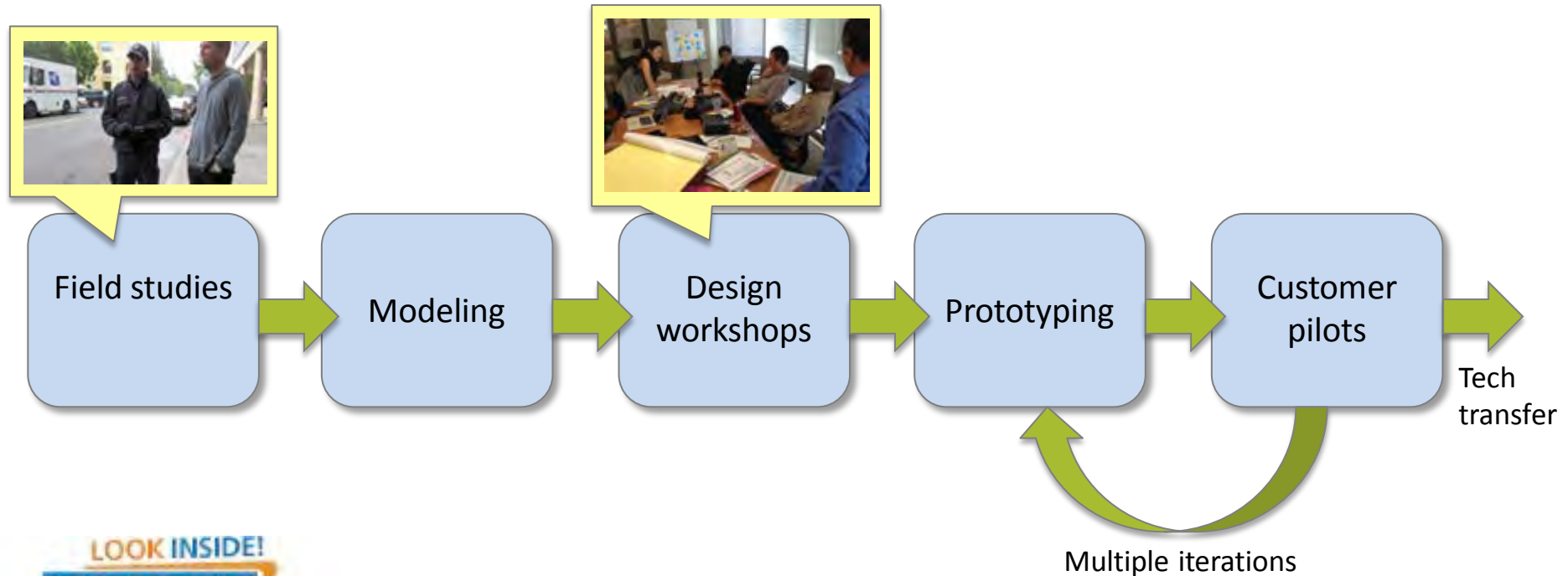
Learning Cultures Accept Failure

Minimize total time through the loop



experiments
**Let's make
better ~~mistakes~~
tomorrow.**

Agility: A repeatable innovation process



Multiple benefits of this approach:

- Solve the right problem
- Understand how value is created
- Avoid costly revisions after launch



**March 13-14: PARC Innovation Lab:
“A *Blueprint for Innovation Leadership*”**

Bridging the Distance and Culture Gap: PARC Japan Innovation Services


- Mitsubishi EGG: Local Presence
- Ethnography and Innovation Workshops
- Collaborative Relationships
- <http://www.parc.com/jp/>
- Local Business Lead: Makio Sasa



Learnings From Business in Japan

Relationships are key to success

Relationship development must be done over time – and business transactions will follow only after trust has been established.

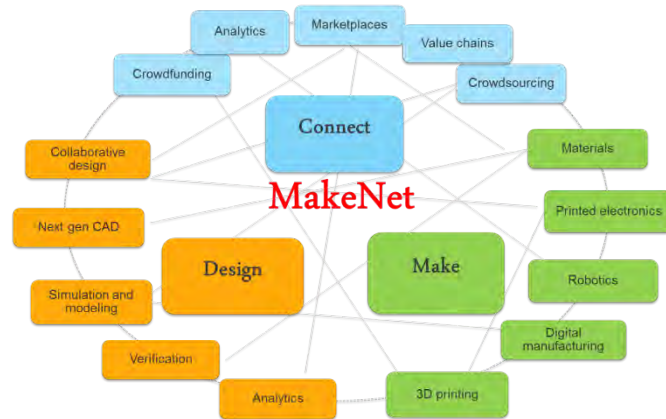


But – relationships also last; they are worth the time invested.

Every transaction will have unique aspects:

- Culture
- Japanese business ecosystem
- Differences in risk appetite

PARC - Creating the Future



**MakeNet:
The Future of Manufacturing**



**The Democratization
of Energy**

Smart Devices
The Power of
Bits & Atoms



**Useable
Information**
Privacy & The
Digital Self



**Smart
Infrastructure**
The Network of
Everything



ESSAY | August 20, 2011

Why Software Is Eating The World

Article

Video

Comments (445)



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By MARC ANDREESSEN

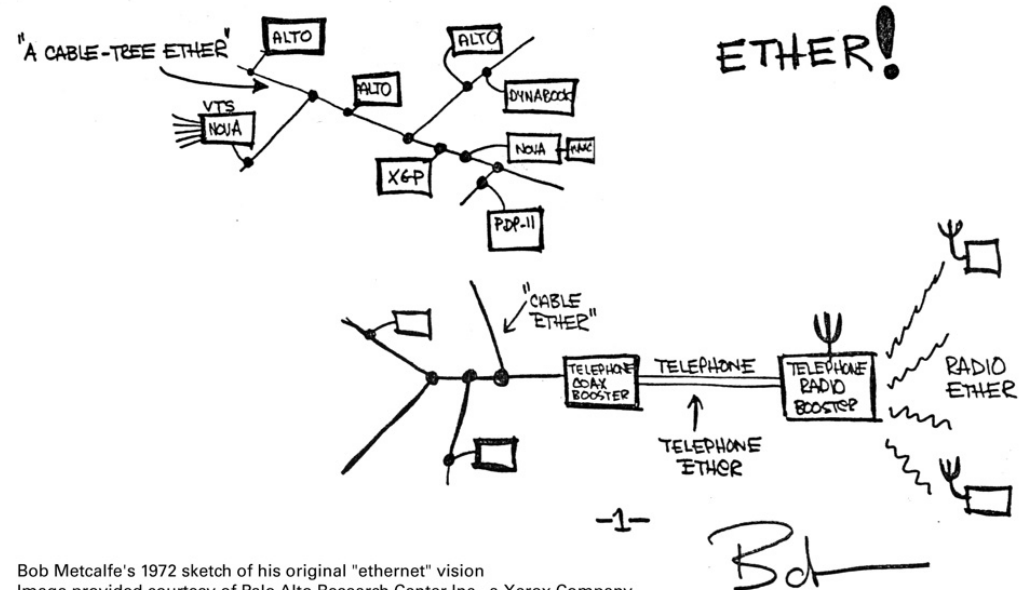
This week, Hewlett-Packard (where I am on the board) announced that it is exploring jettisoning its struggling PC business in favor of investing more heavily in software, where it sees better potential for growth. Meanwhile, Google plans to buy up the cellphone handset maker Motorola Mobility. Both moves surprised the tech world. But both moves are also in line with a trend I've observed, one that makes me optimistic about the future growth of the American and world economies, despite the recent turmoil in the stock market.



In short, software is eating the world.

More than 10 years after the peak of the 1990s dot-com bubble, a dozen or so new Internet companies like Facebook and Twitter are sparking controversy in Silicon Valley, due to their rapidly growing

Computing

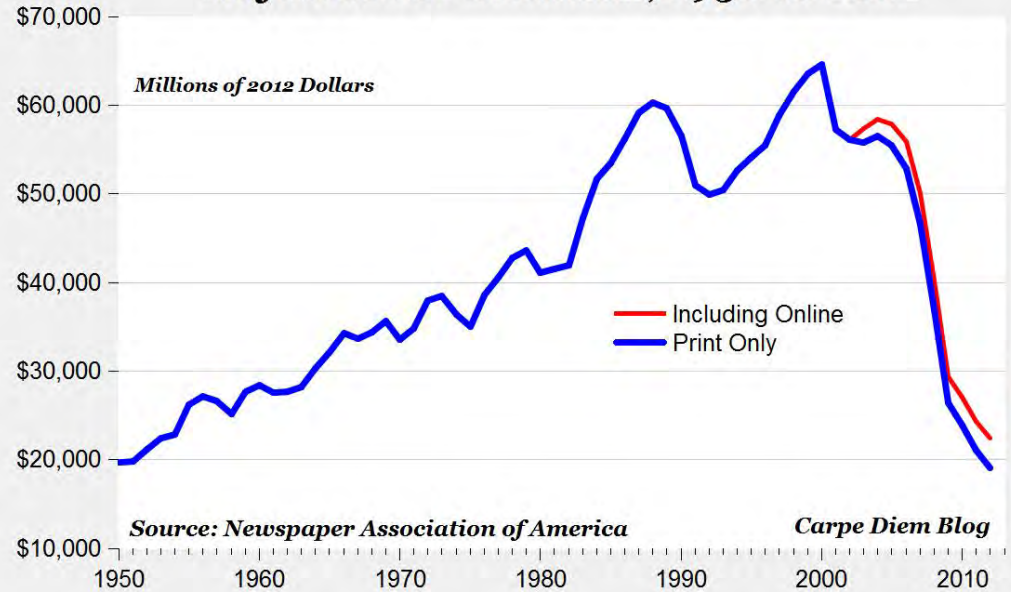


Bob Metcalfe's 1972 sketch of his original "ethernet" vision
Image provided courtesy of Palo Alto Research Center Inc., a Xerox Company

Media

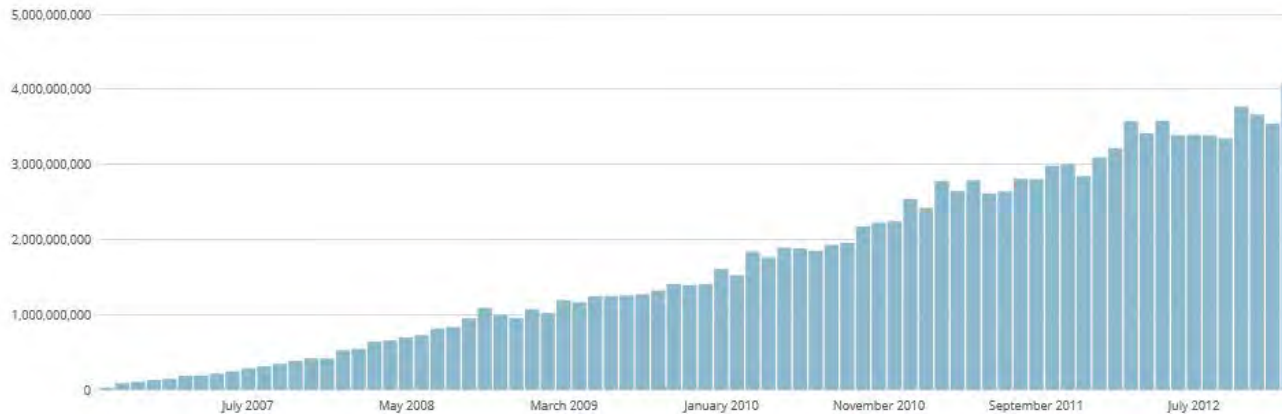
Newspaper ads
down **3X** in one
decade

Newspaper Advertising Revenue Adjusted for Inflation, 1950 to 2012



Views

The number of pageviews across all public WordPress.com sites.



Digital Views
Rise

The impact of software eating everything



Democratization

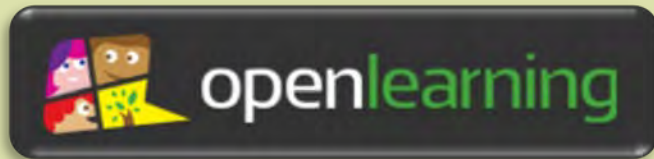
and Disintermediation

Education

Stanford ONLINE



The Khan Academy logo consists of a green tree icon with a hand as its trunk, followed by the text 'KHANACADEMY'. Below the logo is a screenshot of a math practice page. The page includes a diagram with nodes labeled 'Representing numbers', 'Number line', '2-digit addition', and '3-digit addition', and a graph showing a blue curve and an orange line. Below the screenshot, the text reads: 'Practice your math skills' and 'Practice your math skills from addition to calculus and everything in between.'



A screenshot of the UC Berkeley YouTube channel page. The page header includes 'Berkeley University of California', 'Courses', 'Campus Life', 'Events', and 'Athletics'. Below the header, there are sections for 'Featured Playlists' and 'Uploaded videos', each displaying a grid of video thumbnails.



Healthcare



patientslikeme®

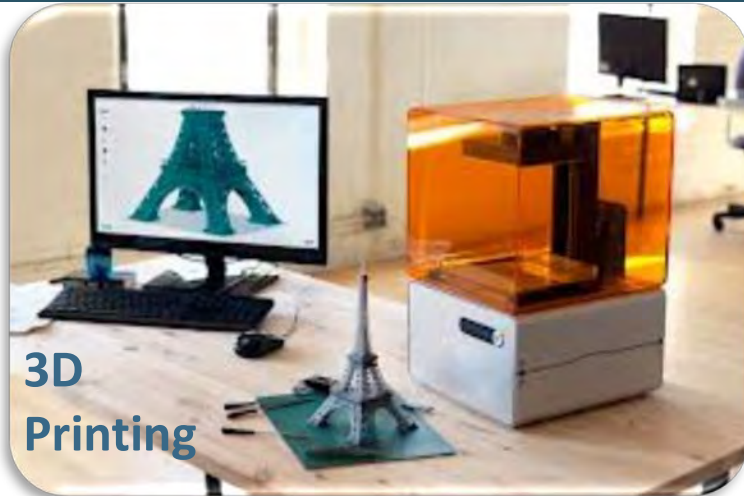


WebMD
Better information. Better health.™



What's will software eat next? The Future of Making Things

Early indicators in making...



3D
Printing



Self-learning
robots



Electronics

Some PARC technologies

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The New York Times **Science**

WORLD U.S. N.Y. / REGION BUSINESS TECHNOLOGY SCIENCE HEALTH ENVIRONMENT

Tiny Chiplets: A New Level of Micro Manufacturing

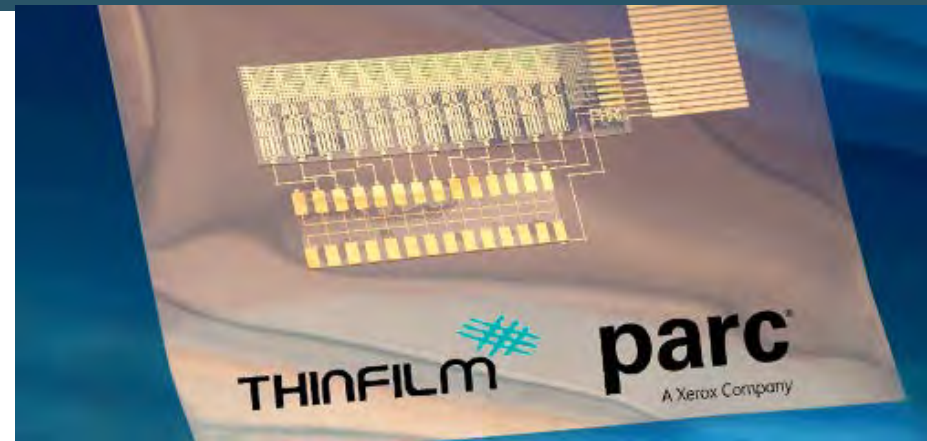
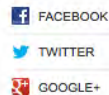


Amy Sullivan/PARC

An enlarged view of small slivers of silicon, each no larger than a grain of sand, called chiplets. Using laser printers, Xerox's Palo Alto Research Center may one day be able to create desktop manufacturing plants that use chiplets to "print" the circuitry for a wide array of electronic devices.

By JOHN MARKOFF
Published: April 8, 2013

PALO ALTO, Calif. — Under a microscope, four slivers of silicon — electronic circuits called chiplets — perform an elaborate, jerky dance as if controlled by a hidden puppet master. Then on command, they all settle with pinpoint accuracy, precisely touching a pattern of



The Value Chain for Making Things

Imagine

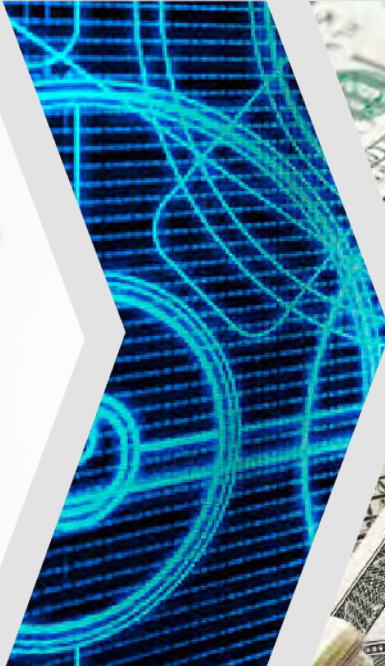
Design

Fund

Source

Make

Ship



Early indicators in funding...

4.9 million people have
pledged **\$700 million,**
funding **48,000**
creative projects

KICKSTARTER

68,929

backers

\$10,266,845

pledged of \$100,000 goal

April 11, 2012 - May 18, 2012

Funding dates



Pebble E-Paper Watch for iPhone and Android

A research paper on *crowdfunding* found that

“In a sample of **48,500 projects**, more than

75% didn't ship on time.”

- Ethan Mollick
Asst. Professor of Management
University Of Pennsylvania
Wharton School

Democratizing Design & Value Chains

TINKERCAD

Learn to use Tinkercad in three easy steps

- 1 Place**
Shapes are the basic building blocks of Tinkercad, a shape can add or remove material. You can work with pre-existing shapes or import your own.*
- 2 Adjust**
Shapes can be moved, rotated and adjusted freely in space. Use tools like the ruler to input exact dimensions.
- 3 Combine**
A custom shape is created by grouping together a set of shapes. By building more intricate shapes you can step by step create very detailed models.

Your idea in 3D
Designing physical models for either manufacturing or visualization requires solid modeling. All operations in Tinkercad generate proper solids.

[Start the editor](#)
Free trial, no credit card required

THE ARDUINO STARTER KIT
EVERYTHING YOU NEED SKILL LEVEL: BEGINNER
FOR YOUR FIRST ARDUINO PROJECTS

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ARDUINO IS AN OPEN-SOURCE ELECTRONICS PROTOTYPING PLATFORM BASED ON FLEXIBLE, EASY-TO-USE HARDWARE AND SOFTWARE. IT'S INTENDED FOR ARTISTS, DESIGNERS, HOBBYISTS AND ANYONE INTERESTED IN CREATING INTERACTIVE OBJECTS OR ENVIRONMENTS.

dragon ROBOTICS

FUELING THE HARDWARE REVOLUTION

Tomorrow's Products • Today's Best Makers • Dragon Certified

[Explore Open Projects](#)



Some PARC technologies

ADAPTIVE VEHICLE MAKE (AVM) View AVM Program Objective ?

MODEL LIBRARY
C2M2L is developing models for the FANG Infantry fighting vehicle.
[Learn More](#)

COLLABORATION CAPABILITY
Collaborate on cyber-electro-mechanical systems.
[Learn More](#)

DESIGN COMPETITIONS
FANG is a series prize-based design competitions for complex vehicle subsystems.
[Learn More](#)

MANUFACTURING FOUNDRY
iFAB will lay the groundwork for the development of a foundry-style manufacturing capability.
[Learn More](#)

NEXT GENERATION INFANTRY FIGHTING VEHICLE

DESIGN TOOLS
The META program delivers tools for compositional design synthesis.
[Learn More](#)

Design tools for synthesis & verification parc

```

graph TD
    Libraries --> FCD((Family of Concept Designs))
    FCD --> AA[Automated Analysis]
    AA --> APV[Automated Probabilistic Verification]
    APV --> FCD
    
```

Process-driven design: applied to conventional manufacturing processes parc

DFM Analysis

Automated High-Level Process Planning

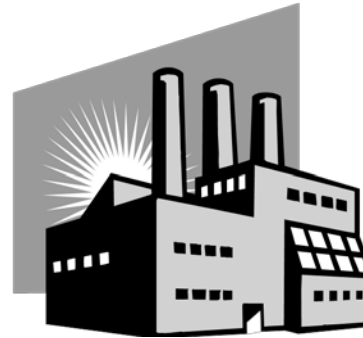
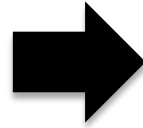
Automated Detailed Planning

- Real-time design for manufacturability analysis
- Computer aided process planning
- Automated tool paths, fixturing & set-up planning, machine code generation

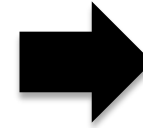
The old way



In house skills and funding or VC's



Vertically integrated production
Timescale: 1 year



Many of the same product



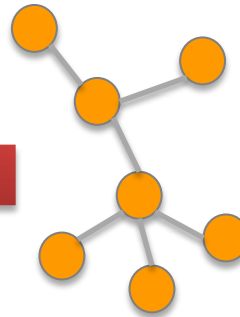
The new way



On demand teams of distributed experts, customers, creators



Intelligent design tools



Network of manufacturers



Thousands of new products, each of them can be different

Timescale: 1 week





parc.com



@parcinc



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Thank you!

PARC Innovation Lab
A Blueprint for Innovation Leadership
March 13-14 @ PARC