A Co-Innovation Business Model: Lessons from an Industry Perspective

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Is Co-Innovation the New Open Innovation?

Open Innovation

- A clear need is specified
- You go outside your enterprise to get resources that fulfill that need
- The solution is ready or nearly ready
- How may breakthrough products are you aware of that have been created through open innovation?

Lead User Innovation

- Prospective customers have pressing needs
- These may become widespread needs
- The lead customers may face these needs ahead of the rest of the market

Co-Innovation

- Two or more companies work together (partner) to solve a problem, invent something new, and/or launch a new product, process, or concept

Partnership Innovation

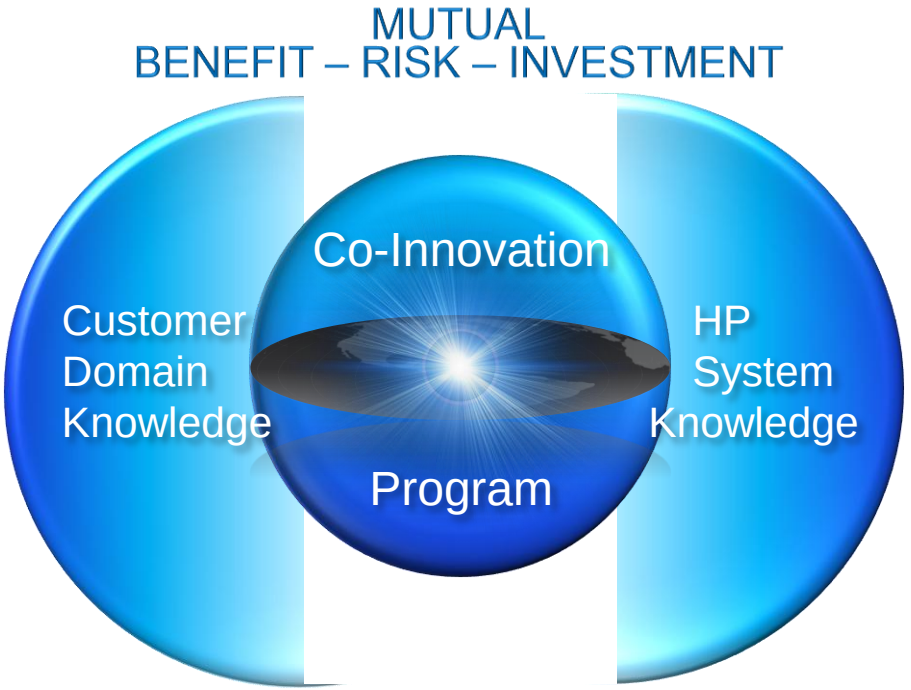
- Innovation: The introduction of something new…http://www.merriam-webster.com/dictionary/innovation
- An idea, method, device, process, business model
- Done with a partner participating in your innovation ecosystem

FROST & SULLIVAN

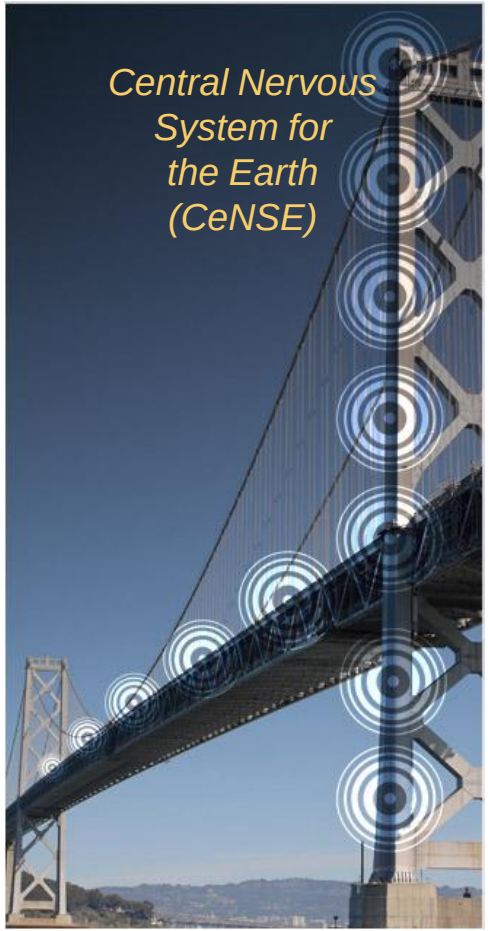
Co-innovation Overview

Identify transformational problems where HP provides our co-innovation partner with unique market advantage resulting in:

- Significant new revenue & profit streams for both partners
- Leadership position for co-innovation partners in area of innovation
- Market disruption through new technology, scale or business models
- Sustainable business model for HP and partner

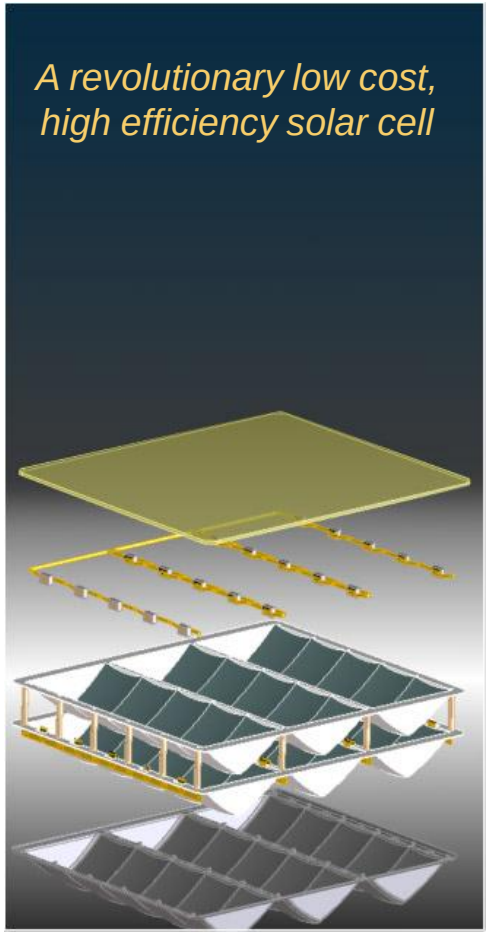


Sensing as a Service



Multi-Component Oxide

Very High Efficiency Solar



Multi-Component Oxide

The display backplane of the future for the flat panel display industry

A new family of thin-film transistors based on semiconducting oxides

Multi-component oxide compositions offer performance and process advantages.

- **Transparent for better image quality**
- **High Mobility for sharper images on large displays**
- **Voltage stability for long life**
- **Low Temperature processing for lower cost displays**

Co-innovation with Oregon State University and multiple display manufactures.

Glass substrates with transparent transistors

The information contained herein is subject to change without notice.

Very High Efficiency Solar Cells

A revolutionary low cost, high efficiency solar cell

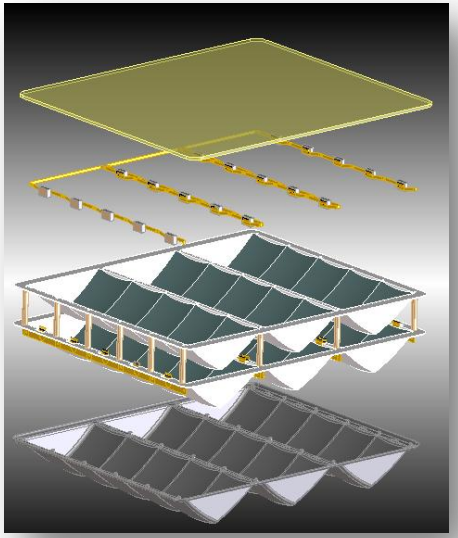
HP Design Goal: ½ - ¼ the cost per KW of Si solar cell

Disruptive approach to leveraging high-volume plastic and optics to focus energy to the Photovoltaic (the most expensive component)

- **25-35% efficient (depending on PV)**
- **>250 times light concentration**

Co-innovation with DARPA and with a manufacturing partner.

Original HP/DARPA Design



HP Low Cost Scalable Design

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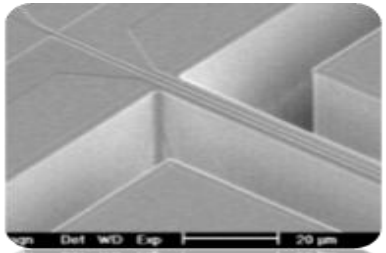
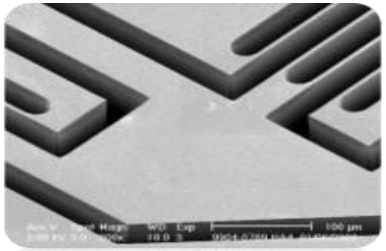
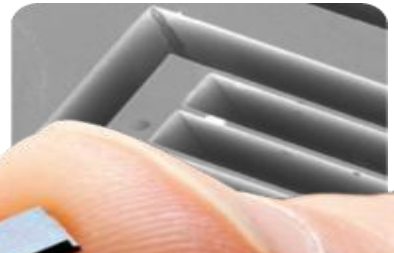
HP MEMS
Inertial Sensing Technology

- 1000x higher resolution: <10 nano-g to 10g
- Low mW power for battery operation

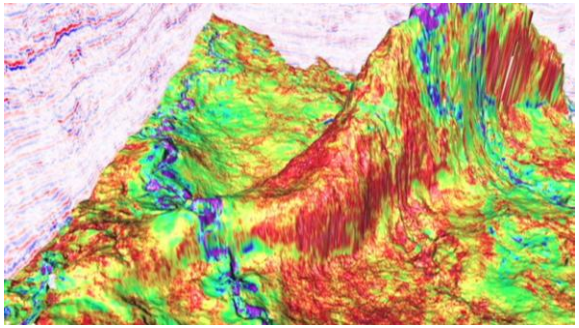


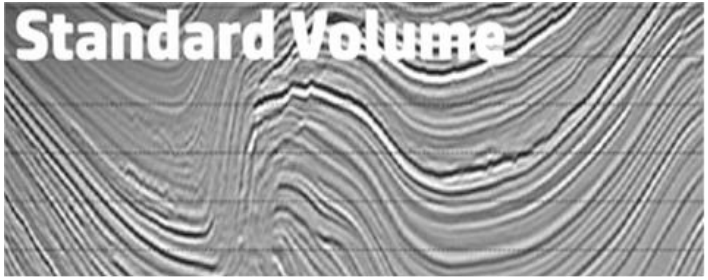


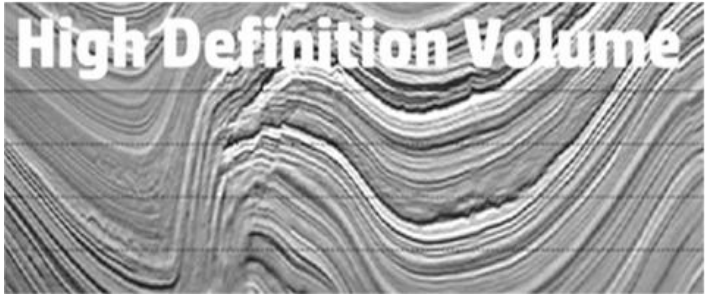


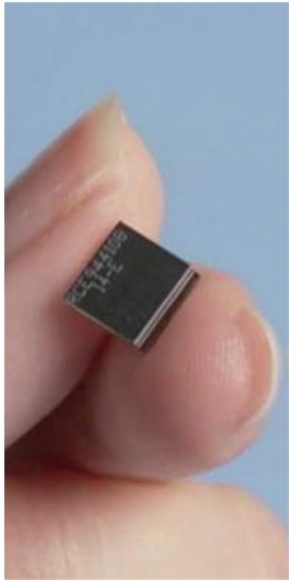
- Leverages existing HP 200mm inkjet fab

HP/Shell seismic acquisition system









Current market seismic systems

Cabled and Analog:

- 100's of KM of cables
- Analog sensors strings
- Very heavy and bulky
- High rate of cluster failures based on damaged cables

Wireless million channel system

The case for Wireless:

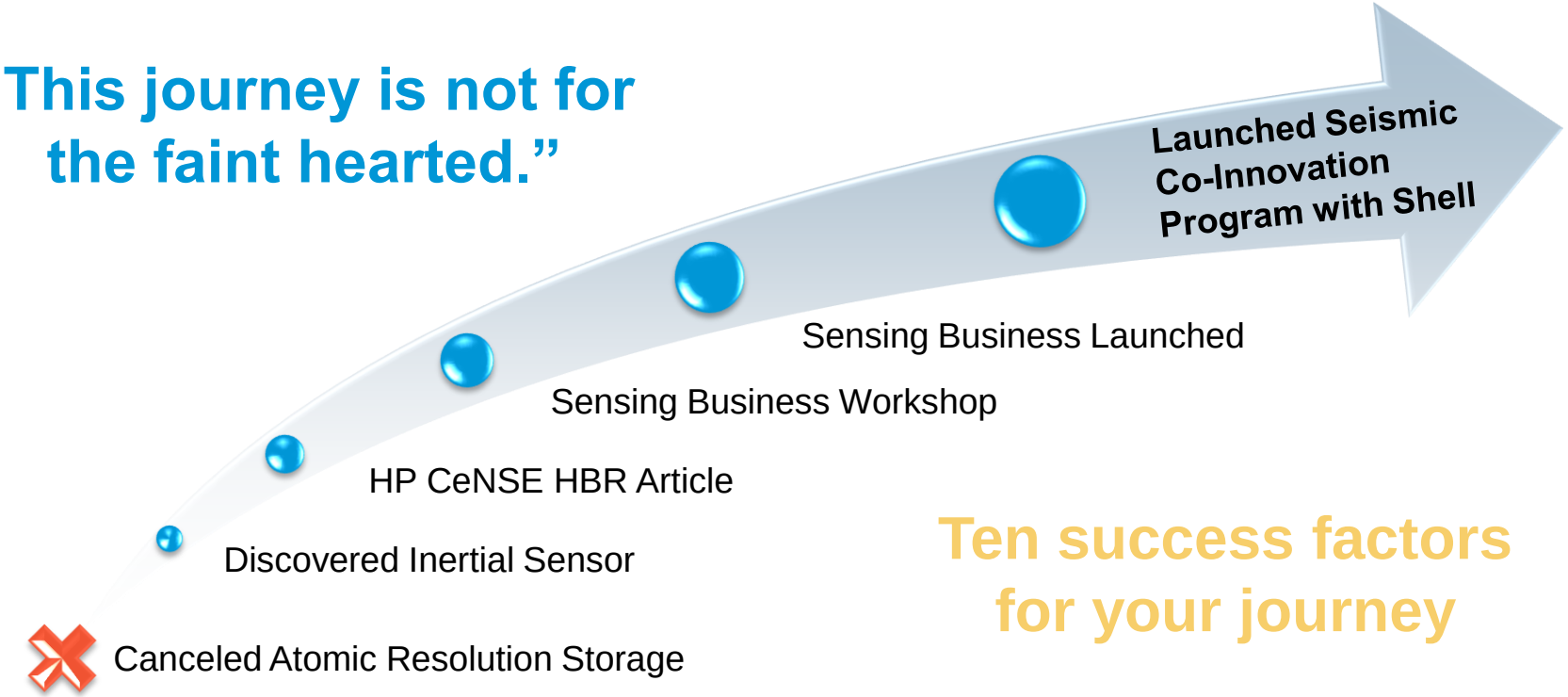
- No cables
- Flexible survey design
- Light weight / low volume
- Deployment flexibility
- … but batteries required

Requirements:

- Light weight
- Low power consumption
- Low noise
- Wide frequency response
- Rugged

From canceled project to market disruption

“This journey is not for the faint hearted.”



Ten success factors for your journey

Success Factors

Internal

Partner

Value Creation

Market Disruption

1 Shelter the project from internal metrics and processes

Success Factors

Internal

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2 Banish supplier / procurement thinking

Partner

Value Creation

Market Disruption

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1. Shelter the project from internal metrics and processes
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Partner

3. Have the tough conversations up front

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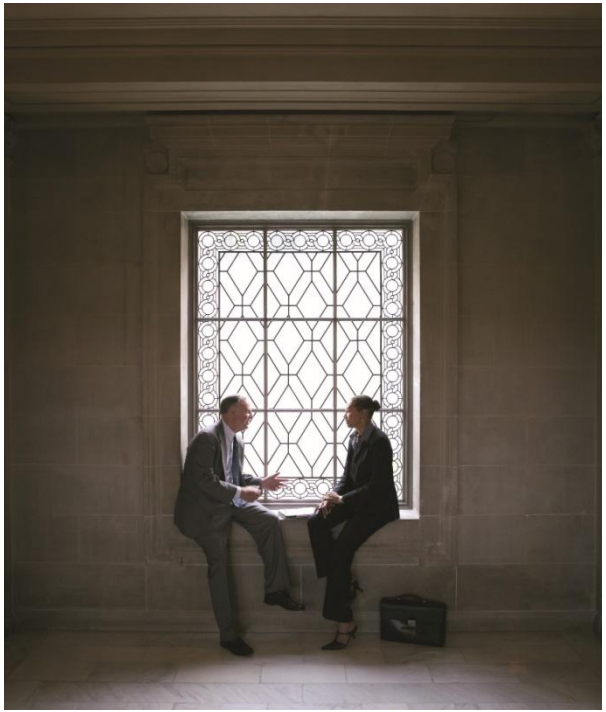

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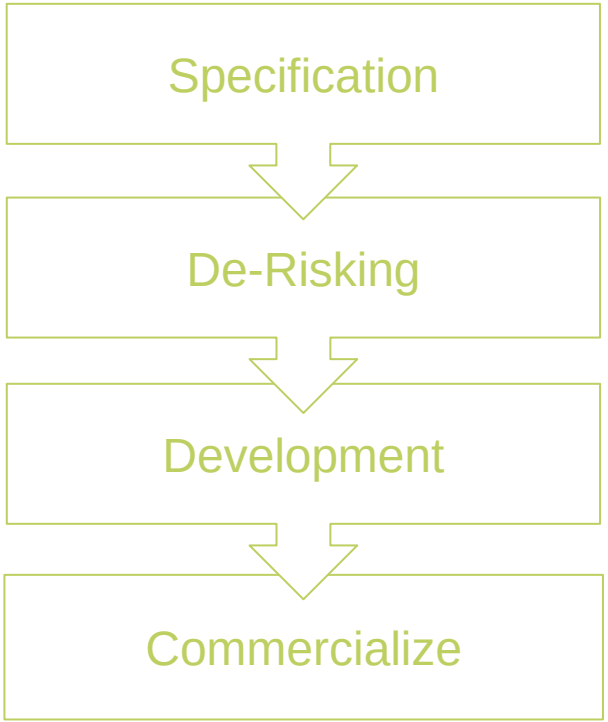
6. Every decision needs to improve risk adjusted value

Market Disruption

Co-innovation Phases:



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7. Communicate your vision (prepare the market, build your brand)

Market Disruption

Nov 2009:
HP announced a new inertial sensing technology that delivers an entirely new combination of performance low power consumption and low cost

Feb 2010:
HP and Shell announced a collaboration to develop a wireless sensing system to acquire extremely high-resolution seismic data on land

Mar 2011:

HP and Shell announced test results that prove ability to acquire considerably more lower-noise data

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Market Disruption

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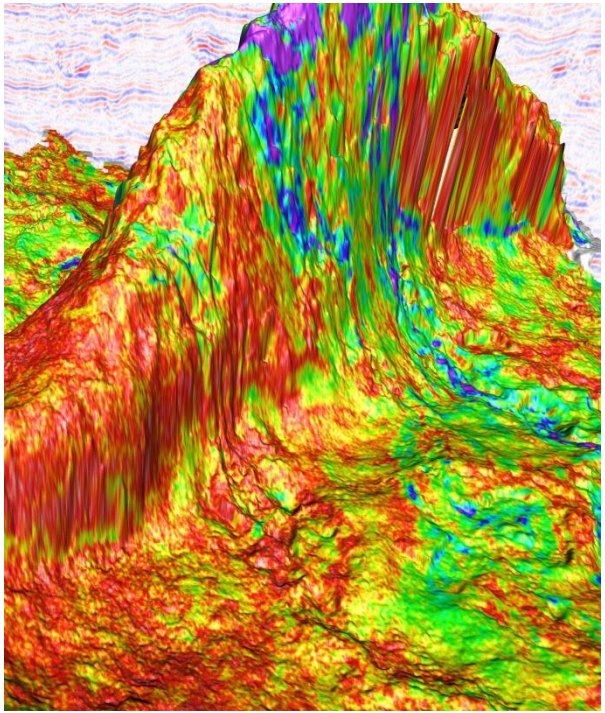

Success Factors

Internal	1	Shelter the project from internal metrics and processes
	2	Banish supplier / procurement thinking
Partner	3	Have the tough conversations up front
	4	Negotiate based on principles
	5	Never over estimate your knowledge of your partner
Value Creation	6	Every decision needs to improve risk adjusted value
	7	Communicate your vision (prepare the market, build your brand)
Market Disruption	8	Market disruptions are often driven by technology innovation
	9	New businesses fail for commercial reasons

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Market Disruption

8. Market disruptions are often driven by technology innovation
9. New businesses fail for commercial reasons
10. The more outrageous the vision, the more resilient the program


Security/Access


Infrastructure


Real-time traffic


Climate monitoring


Home automation


Water/Gas

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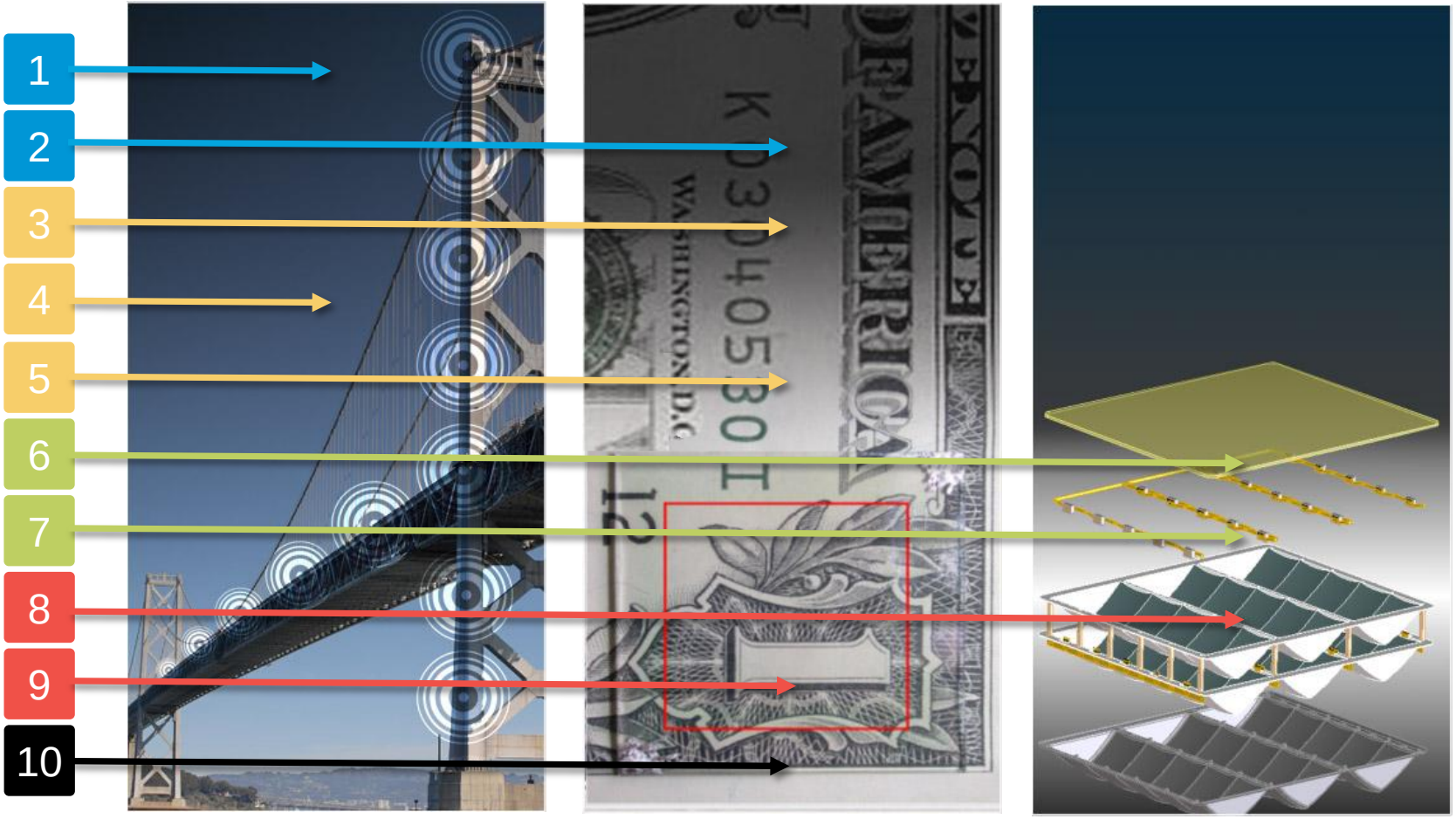
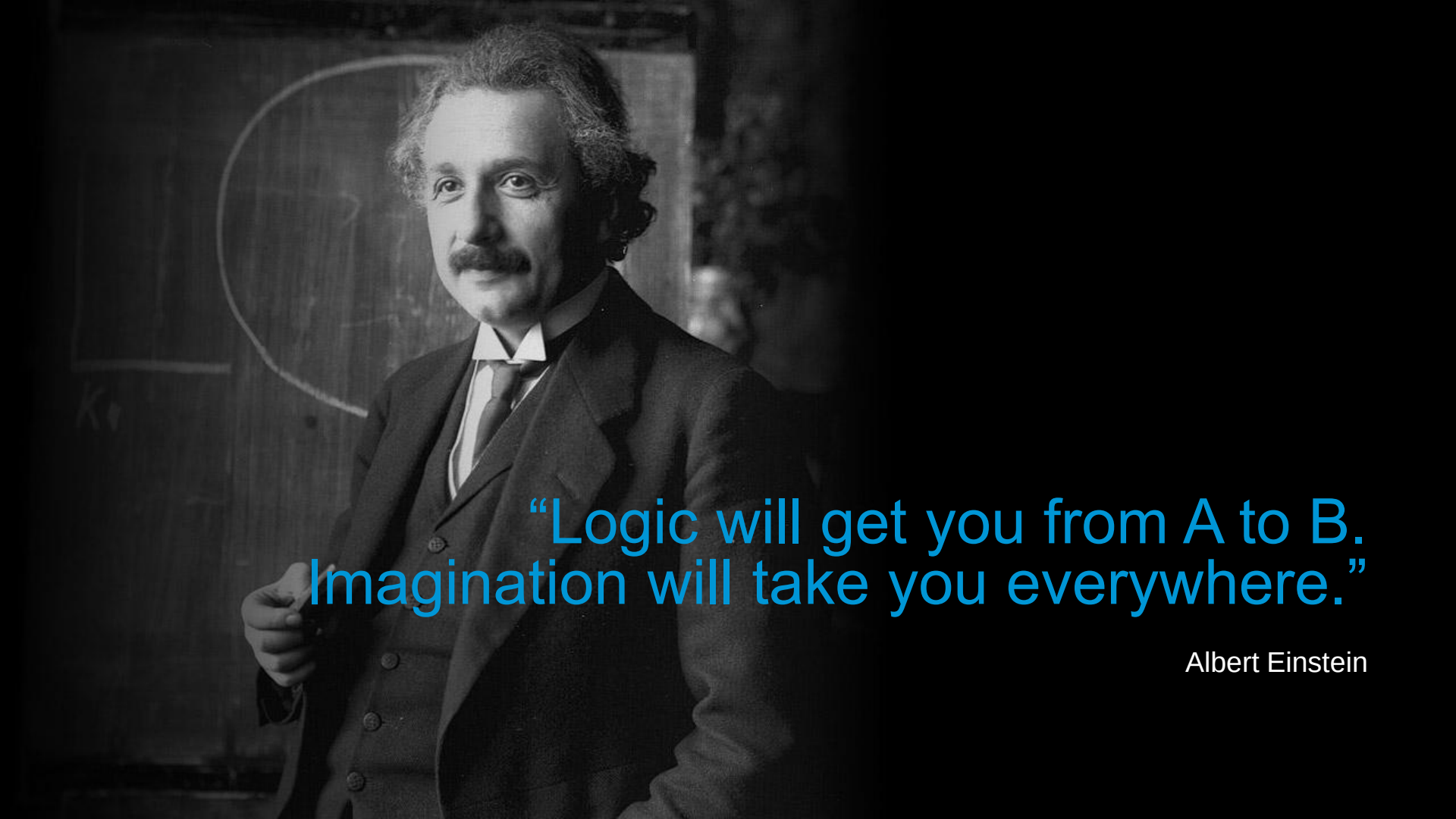
Very High Efficiency Solar




“Logic will get you from A to B.
Imagination will take you everywhere.”
Albert Einstein

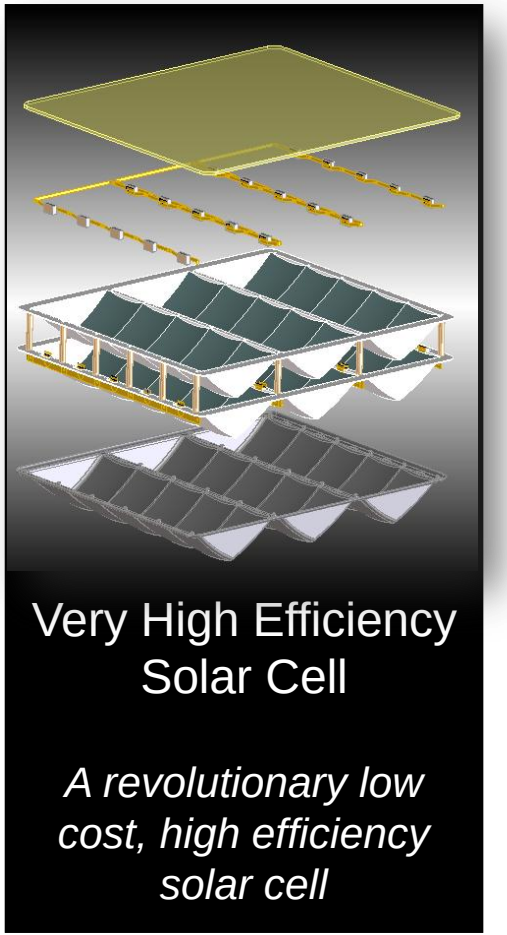
Thank you

Sensing as a Service

Central Nervous System for the Earth CeNSE

Multi-Component Oxide

The display backplane of the future for the flat panel display industry



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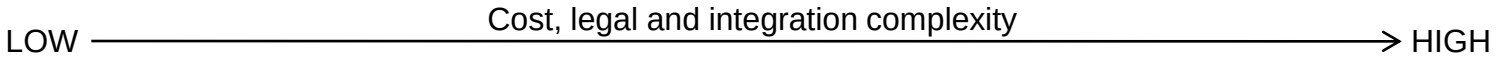
Collaboration Continuum

	Transactional Agreement	Strategic Partnership	Joint Venture	M&A
GOAL:	Access a a specific, readily available capability through a contract with a third party	Create a shared value through combined risk, funding, and resource contributions	Combined assets to establish a separate business entity	Assume ownership of another company's IP, capabilities, resources and talent
CHARACTERISTICS:	• Minimal collaboration • Specific goals • Finite commitment	• Long-term commitment • Reciprocal relationship • Shared strategy	• Long-term (but finite) commitment • Each company maintains its own business operations and continues to exist apart	• Permanent, legally binding arrangement • One organization formally cedes control to the other (in most instances)



Source: Frost & Sullivan Best Practice Toolkit: Strategic Partnerships