INNOVATION AND CREATING VALUE

FOR QUEEN HEDVIG ACADEMY PROGRAM FOR MANAGEMENT DEVELOPMENT

Steve Ciesinski
Stanford GSB and SRI International| December 2025

Silicon Valley, California

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Introduction

BIO: STEVE CIESINSKI

Silicon Valley Tech Executive, Investor, Board Member, Lecturer

Silicon Valley Career

- Private Investor
- SRI International, President
- Resumix, CEO & Chairman
- Octel Communications, EVP/COO
- Venture Capital: Earlybird Ventures
- Nonprofits: LifeMoves (homeless) Yosemite Conservancy (outdoors), Hidden Villa (youth programs), Stanford Children Hospital

Education

- Stanford University (MBA)
- Union College (BSEE & AB)
- Lecturer at Stanford University (Global Entrepreneurship)
- Union College, Cal Poly (Chairman, Board of Trustees)
- *Email: sjc21@stanford.edu*
- https://ciesinski.com

THIS CLASS IS TARGETED AT ENTREPRENEURS, HIGH POTENTIAL MANAGERS AND CORPORATE EXECUTIVES

FROM MY STANFORD, SILICON VALLEY AND SRI EXPERIENCES

1. **Managers ambitious about their careers**

2. Growth-oriented executives

3. Entrepreneurs/venture capitalists/investors

4. Project leads or **Intrapreneurs**

5. Government Officials

6. Other

THIS <u>LECTURE SERIES</u> INCLUDES 4 MAJOR SECTIONS

You will learn many things that you can immediately apply to your business

Section 1	**Section 2**	**Section 3**	**Section**
Innovation, SRI, DARPA, Stanford, Creating Value	AI Basics, Impact of AI on Innovation and Business	Startups, PMF, Business Models and Go-to-Market	Creating New Companies, Divisions, Product Lines

- Innovation: What is it? Why Do It?

- SRI International, Stanford, DARPA and "Deep Tech"

- Creating and Explaining Value (from Innovations)

- Artificial Intelligence and Its Impact (next time)

- Questions?

- **Innovation: What is it? Why Do It?**

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Starting A (*Repeatable And Scalable*) Business

What Executive Management and Venture Capitalists Look For…

Entre(Intra)preneurs **Founder/Team/ People**	"Breakthrough" **Idea (Innovation)**	Customers/Market **High Value (Big Market)**
Visionary, expertise, insight, passion, creativity, agility,	*Technology, product, service, new approach, new business model, Disruptive*	*Existing, new, ready for or already undergoing change, competition, dynamic Growing*
Resilience and Persistence		

Starting A (*Repeatable And Scalable*) Business

What VCs Look For…

Entrepreneurs
Founder/Team/ People

Visionary, expertise, insight, passion, creativity, agility,

Resilience and Persistence

"Breakthrough" **Idea (Innovation)**

Technology, product, service, new approach, new business model, Disruptive

Customers/Market
High Value (Big Market)

Existing, new, ready for or already undergoing change, competition, dynamic Growing

Customers* need new, innovative products or services to meet their increasingly complex needs.

What is your definition of innovation?

*Consumers or businesses

defining:

innovation

(a common answer)

"I know it when I see it."
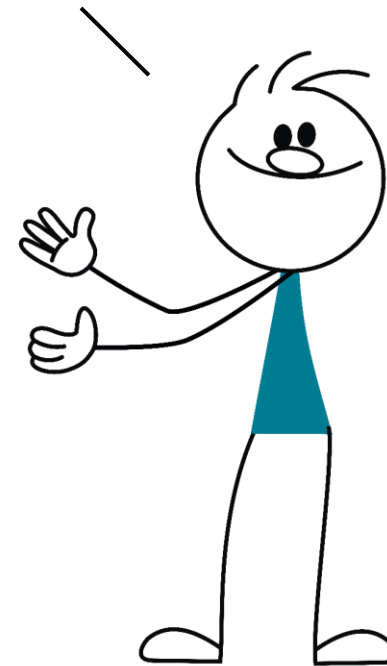
Great for consumers to say…not so great for leaders.

defining
innovation
noun

The **creation** and **delivery** of new **customer value** in the **marketplace** with a sustainable **business model** for the enterprise producing it.

LET'S ENSURE EVERYONE IS WORKING IN THE SAME DIRECTION

Types Of Innovation

Disruptive versus Incremental

Disruptive Innovation

(Smart) **Corporates**

(Always!) **Startups**

Incremental Innovation

Mid-Large Companies

Startups (over time, never at start)

Disruptive Versus Incremental

Disruptive Innovation

Examples:

Rubber tire

Cellular technology (1G)

Amazon.com

Original iPhone (Smartphone)

WiFi

Breakthrough new products

Incremental Innovation

Examples:

High mileage tires, Off-road tires, snow tires

2G, 3G, 4G, 5G connectivity

One-click shopping

iPhone 16Pro

Mesh Networks

Product "extensions" (minor improvements)

Unfortunately, Most Mid-large Companies Fail To Satisfy Their Customers— **They Stop Disruptive Innovating** (or what allowed them to become big)

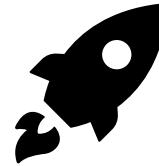# INCREMENTAL AND DISRUPTIVE INNOVATIONS ARE BOTH ESSENTIAL

Startups, SMEs and Large Companies ALL Need To Do Both To Survive!

Incremental Innovation

Incremental innovations are improvements to existing products that will keep current customers happy and allow company to stay competitive ("Nurturing")

Disruptive Innovation

Disruptive innovations are dramatic new offerings that will allow company to expand and increase market share, move into new markets and inspire intrapreneurs

Most medium-large companies FAIL to create new disruptive products, and slowly (or sometimes quickly) become irrelevant (dinosaurs) in the market

~~Apple is an excellent example of a company that keeps creating disruptive innovations~~

MANY LARGE COMPANIES FAIL TO INNOVATE (COMPLACENCY)
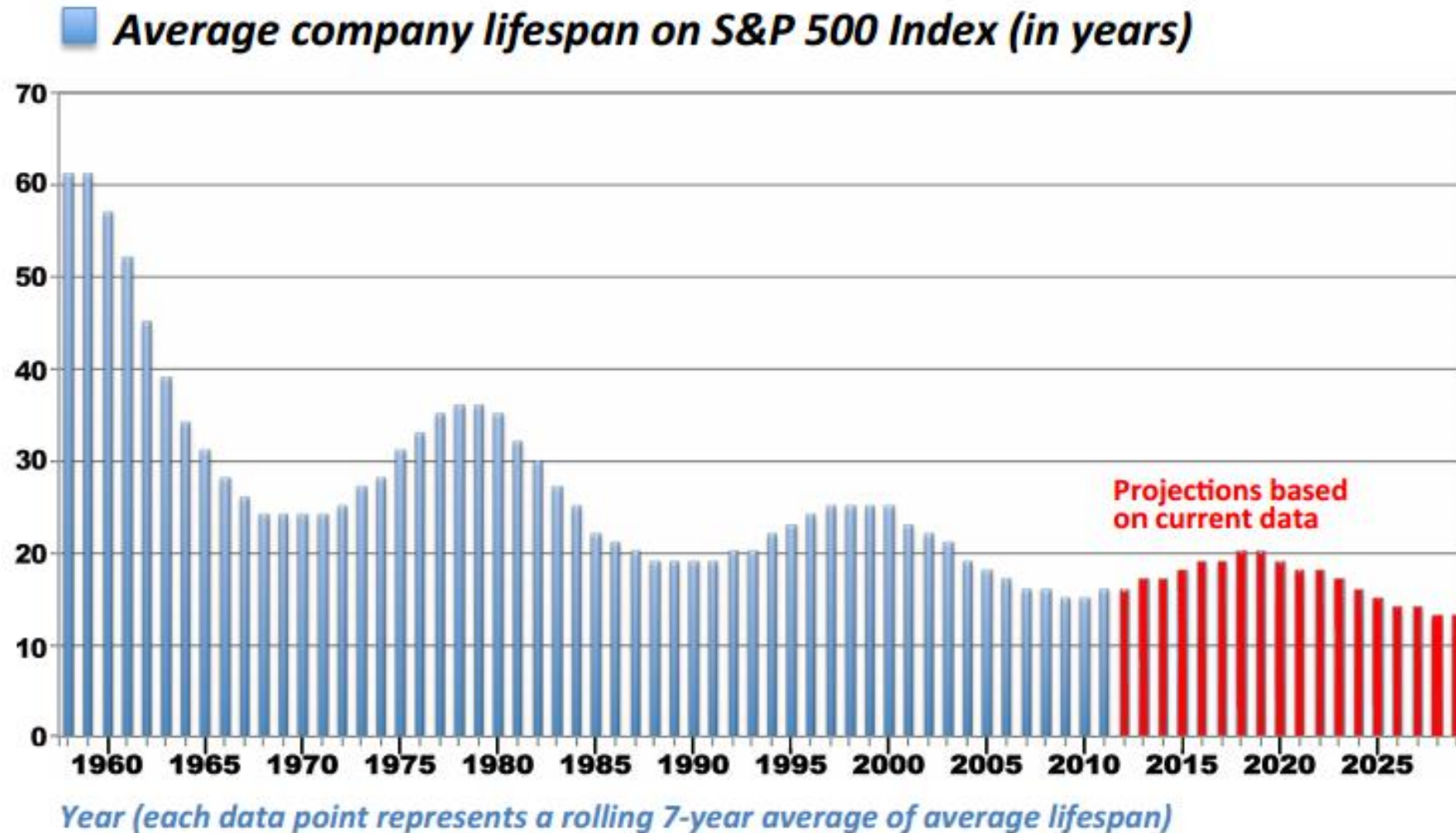
"**Longevity in this business is about being able to <u>reinvent yourself or invent the future</u>.**"

- Satya Nadella
CEO of Microsoft

LONGEVITY ON S&P500 TRENDING LOWER...

Average company lifespan on S&P 500 Index (in years)

Projections based on current data

Year (each data point represents a rolling 7-year average of average lifespan)

Disruptive <u>and</u> Incremental

1. *Incremental* innovations will keep current customers happy and allow company to stay competitive

2. *Disruptive* innovations will allow company to increase market share, move into new markets and inspire intrapreneurs

3. Most large companies <u>fail</u> to create new disruptive products

4. Google, Amazon, P&G, 3M, etc. are excellent examples of companies that continuously create disruptive innovations (plus incremental innovations)

Silicon Valley Is The Model For The Best *Innovation* Ecosystem

Smart, sophisticated talent

Major R&D universities and research

Targeting big, global markets

All kinds of risk funding

Mentors and Coaches

Predictable regulatory framework

Strong entrepreneurial culture

Large companies and clusters

Meritocracy = achievement (not $ as primary)

San Francisco

SILICON VALLEY
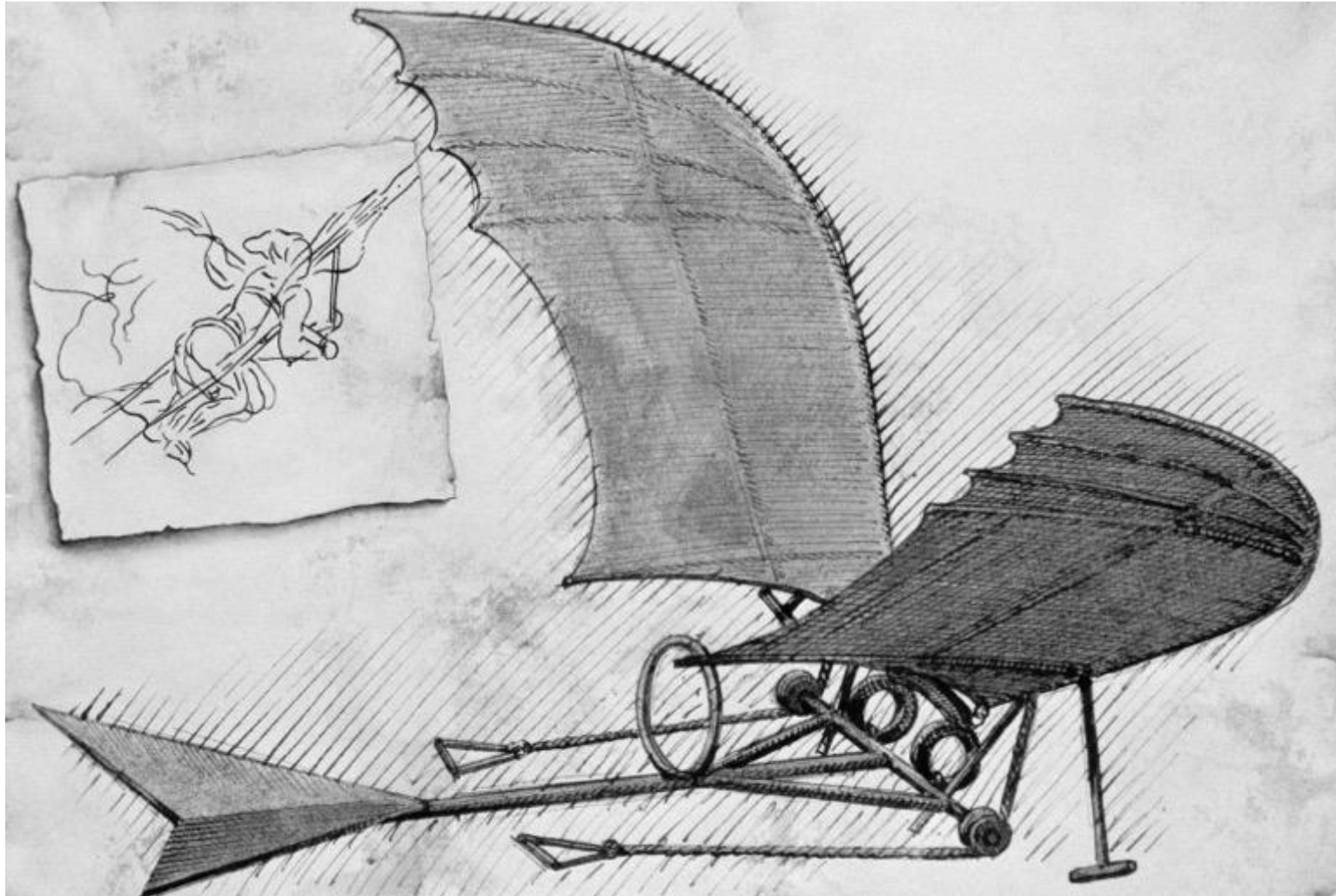
SFO

Stanford
University

San Jose

INNOVATION IS A *PROCESS*...NOT AN EVENT

Rarely the result of luck or genius...

...disciplined continuous improvement process with a focus on creating customer value

Leonardo da Vinci, circa 1485

450 years later...

1935: 1st Transpacific commercial flight, San Francisco to Manila

INVENTION (NOT) = INNOVATION

"Build a better mousetrap, and the world will beat a path to your door." NO!

- Ralph Waldo Emerson

The U.S. Patent Office has issued over 6,000 mousetrap patents.

Only two have had real success!

A Breakthrough **Innovation** Example (from SRI)

The DaVinci Robotic Surgery Platform, by Intuitive Surgical

- birthed at SRI International,
- funded by DARPA

$200B+ Market Cap

Another Breakthrough **Innovation** Example

An **Innovation** Can Be So Simple, Yet So Powerful...

TODAY'S TOPICS

- Innovation: What is it? Why Do It?

- **SRI International, Stanford, DARPA and "Deep Tech"**

- Creating and Explaining Value (from Innovations)

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INTRODUCING
SRI INTERNATIONAL

SRI International: World Leader In Tech Innovation

- Founded by Stanford University in 1946

- Independent nonprofit research center

- $450+ million in annual revenue

- 1,500 employees, 30 labs, 21 locations

- 4000+ patents, 500 disclosures/year

- 500 research projects annually

- 70+ spin-off companies

- 100+ commercial projects/year

San Francisco

SILICON VALLEY

SFO

SRI International

Stanford University

San Jose

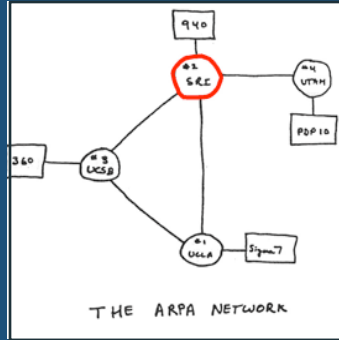# Independent · Mission-driven · Non-profit

SRI's Mission
Create and deliver **WORLD-CHANGING SOLUTIONS** for a safer, healthier, and more sustainable future.

You Use SRI <u>Innovations</u> Every Day

Computer mouse

1st ARPA-Net message

1st Revolving Credit System

1st Consumer Credit Scoring (FICO)

SWOT Analysis

1st Autonomous Robot

Pioneered Robotic surgery

Siri - 1st virtual assistant

1st Virtual Private Network
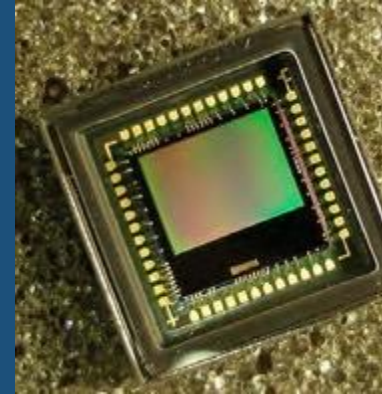

Established Network Intrusion Detection

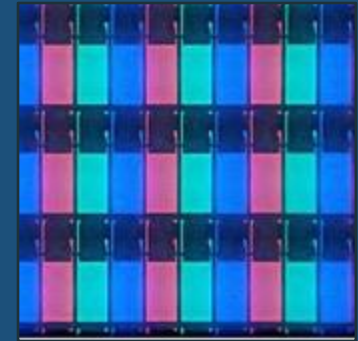# Legacy Of Innovation – Sarnoff (RCA Labs)
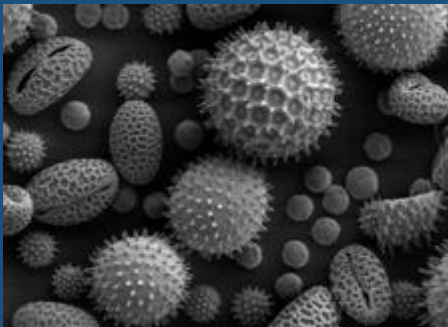
Color TV

Liquid Crystal Display

1st CMOS Imager

Thin Film Transistors

1st Electron Microscope

1st Consumer Satellite TV

1st Augmented Reality Broadcast
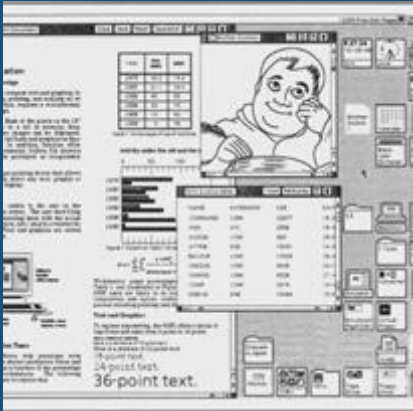
Led HDTV Grand Alliance

Legacy Of Innovation - PARC

1st Commercial Computer mouse

1st Personal Computer

Laser Printing

Electronic Ink Displays

SRI • PARC - 6 Turing Awards!

1997: Doug Engelbart

1992: Butler Lampson
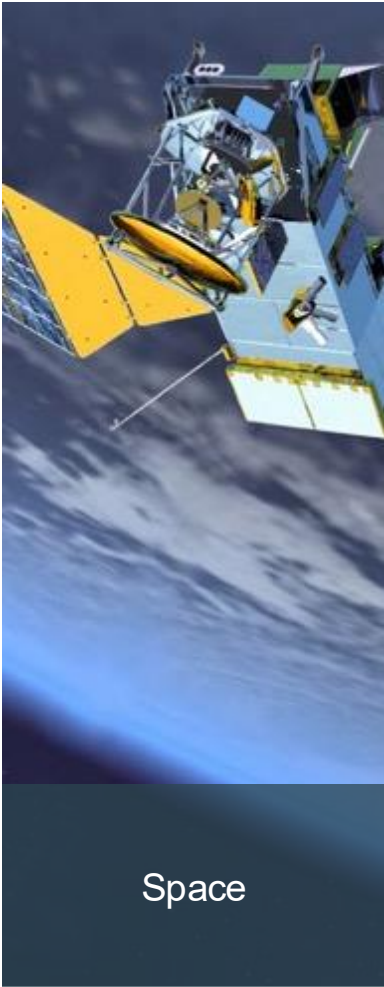
2009: Charles Thacker

2013: Leslie Lamport

2003: Alan Kay

2023: Bob Metcalf

Nobel Prize Physics

2000: Herbert Kroemer

Strategic Initiatives: *TODAY!* *(All include AI technology)*

Climate, energy & sustainability

Personalized / precision medicine

Human machine collaboration

Space

Quantum

Future of work and education

SRI Recent Startups ("Create, Apply, Transition")- also called "Spin-outs"

pienso

+ Building Blocks for Generative AI
+ Pienso empowers non-technical users to construct, deploy, and manage AI models, imbued with enterprise understanding

ninjatech.ai

+ Ninja, a new conversational AI for business
+ Hyper-realistic avatar & AI & conversational intelligence
+ Team from Google, Meta & AWS

GoCharlie

+ Generative AI for marketing content and media generation.
+ Drastically reduces costs for businesses to generate, market and distribute their brand

Midday

+ Women's Health startup using AI to assist women with changes that occur during Menopause
+ Addresses an under-served population in aging societies

SynFini
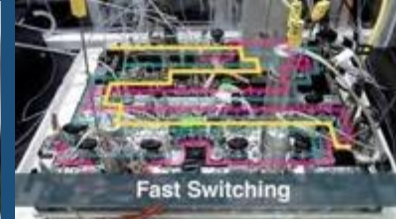
+ Automated molecular design.
+ Combines chemistry AI with robotic automation for closed-loop molecular discovery and analytics

zephr

+ Distributed GPS augmentation improves the accuracy of mobile phones to <50cm
+ Adds a relative distance metric with an accuracy of 5cm.
+ Opens potential for a new generation of services

Case Studies

Case Study

MOTOBOT: Performance + Safety

Yamaha Motors collaborated with SRI to rapidly design, build, and test an autonomous motorcycle-riding robot built around a fusion of motorcycle and humanoid robotics technology.

The goal was to develop a robot able to ride an unmodified stock motorcycle on a racetrack at more than 200kph. The underlying technology will lead to the **creation of advanced rider-safety and rider-support systems.**

Result:
- World 1st motorcycle riding robot
- 9 months from concept to test track
- Exceeded 200 kph

Case Study: *SHISEIDO*

Skin analysis solution using smart phone replacing expensive in-store system

- No special high-end cameras or controlled environment required

- Enhanced user experience leveraging SRI VPA

- Ability to make appropriate and extremely accurate recommendation

- Vision, AI, Speech platforms
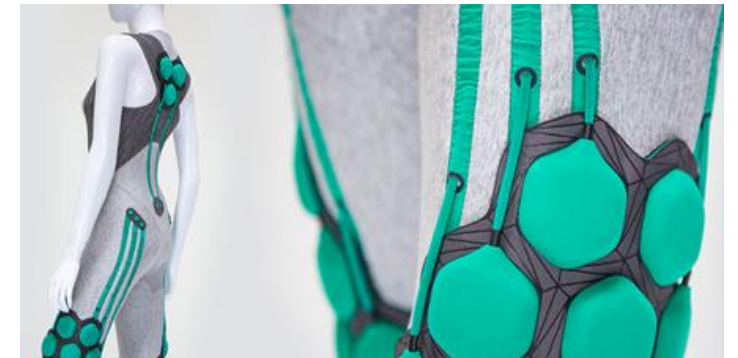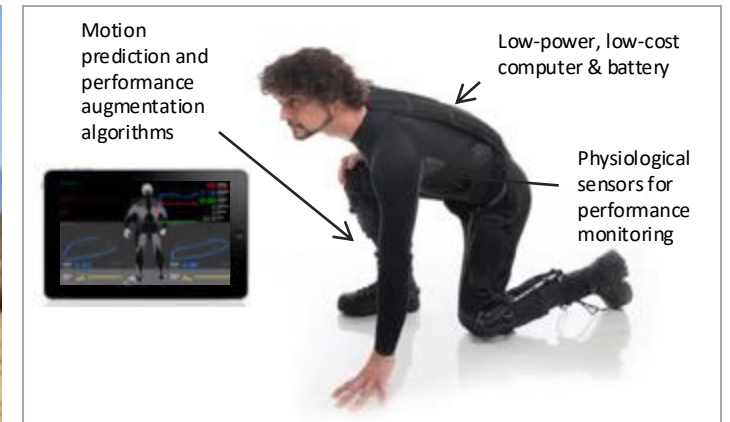
Case Study: "*SEISMIC*"

SEISMIC: Robotic clothing to reduce fatigue and enhance strength

In 2015, DARPA was seeking an alternative to heavy, slow, bulky and inefficient exoskeletons to assist soldiers with heavy loads, over rough terrain and long-distances

The goal was to augment muscular performance, reduce fatigue and injury, while maintaining comfort and range of motion over a full day of use.
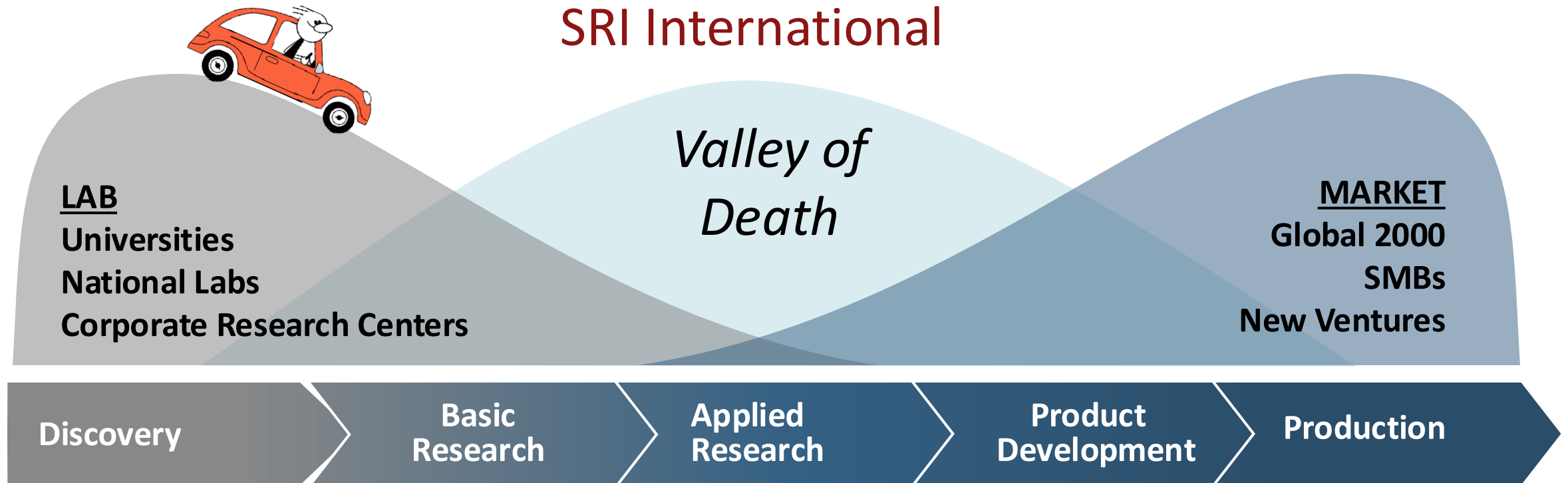
Result:

- 15 months from concept to field demos

- Additional application for health, muscular dystrophy, aging and rehabilitation, athletics, industrial jobs

- New venture – Seismic commercializing wearable robotics for industrial applications

Motion prediction and performance augmentation algorithms

Low-power, low-cost computer & battery

Physiological sensors for performance monitoring

Our "Secret": Bridging Basic Research To Commercialization

SRI Success Rate is 35-40%, versus 3-15% for Most R&D Units of Companies!

SRI International

Valley of Death

LAB
Universities
National Labs
Corporate Research Centers

MARKET
Global 2000
SMBs
New Ventures

Discovery → Basic Research → Applied Research → Product Development → Production
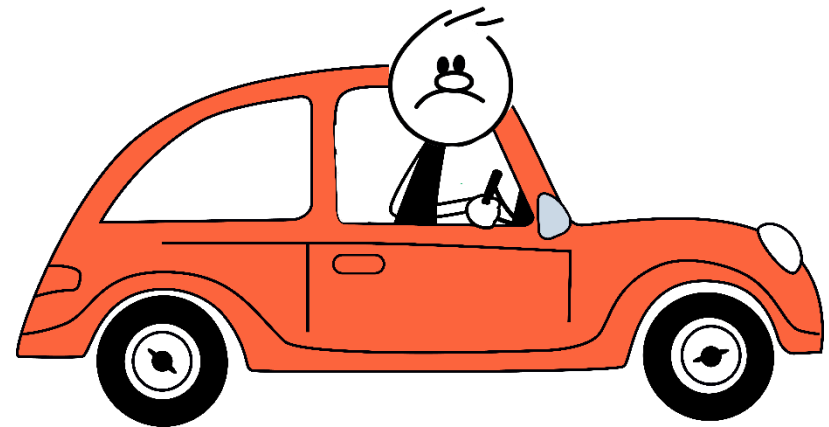
defining:
Valley of Death

noun

Where promising research, IP, know-how, discovery "dies" or fails to progress... **only 1-3%** of WW patents make it out into societal use.

Long-term Partnership Creating Many Useful Innovations

SRI International (formerly <u>Stanford Research Institute</u>) is a nonprofit research institute founded in 1946 The organization conducts R&D across diverse fields including <u>artificial intelligence, robotics, cybersecurity, healthcare, materials science, and defense technologies</u>. SRI creates <u>groundbreaking innovat</u>ions such as the computer mouse, and numerous medical devices and pharmaceutical compounds. The institute works with government agencies, corporations, and other institutions to solve <u>complex technological and scientific</u> challenges.

DARPA (Defense Advanced Research Projects Agency) funds <u>high-risk, high-reward </u>research projects to develop <u>breakthrough technologies</u> for national security. It employs ambitious goals, temporary project teams of experts, and significant <u>autonomy.</u> DARPA's structure facilitates <u>rapid innovation </u>through short-term program managers, flexible contracting, and a focus on <u>pushing the boundaries</u> of science and engineering.

SRI/DARPA Tech innovations

- Computer mouse
- Internet
- Digital camera
- GPS, mapping and navigation
- MEMs sensors (gyro, accelerometer, compass, etc.)
- Antennas
- WiFi
- LEDs
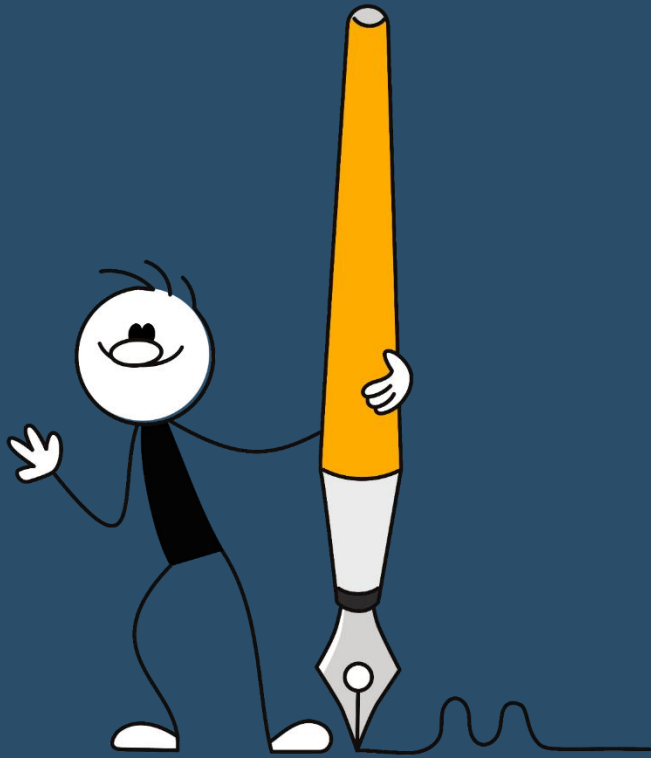- GPUs
- Siri
- AI
- and many more……

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- Innovation: What is it? Why Do It?

- SRI International, Stanford, DARPA and "Deep Tech"

- **Creating and Explaining Value (from Innovations)**

- Artificial Intelligence and Its Impact (next time)

- Questions?

Customer Value

WHAT IS YOUR DEFINITION OF
"CUSTOMER VALUE??"

"VALUE" CHARACTERISTICS

SOME IDEAS TO GET YOU STARTED AS A *"B2B CUSTOMER"*

1. Helps my productivity   -

2. Makes my company money   -

3. Reduces my CAC   -

4. Is "Cool", modern, easy to use   -

                                          -

-

-

VALUE CAN BE QUANTITATIVE

Quantifiable

Demonstrable

Measurable

Tangible

"Concrete"

NUMBERS!

Examples

Computer Performance

Financial returns

Growth

Energy improvement

Speed

BUT VALUE CAN ALSO BE QUALITATIVE

Described but <u>not</u> measurable

Subjective

Judgmental

Vague

Unsubstantiated

Personal

Examples

Brand

Customer experience

Design

Quality of life

Status

Association / Belonging

DISRUPTIVE INNOVATIONS REQUIRE 5-10-100X *VALUE*>> EXISTING/COMPETITION

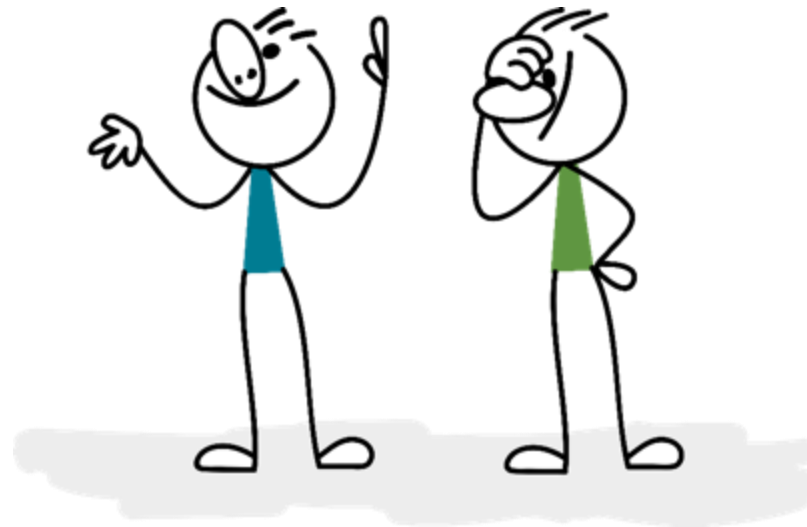10-100X better than existing solution

DISRUPTIVE INNOVATIONS REQUIRE 10X >> EXISTING/COMPETITION

Ncube-2, a Norwegian
CubeSat (10 cm (3.9 in) cube)

10-100X better than existing solution

You have created value, now you need a

"Value Proposition"

WHY?

Because your value may not be so obvious to your CUSTOMER!!!!
….As it is to YOU

defining:
value proposition
noun

A quantitative, easy-to-remember statement that summarizes the value of your offering.

value proposition

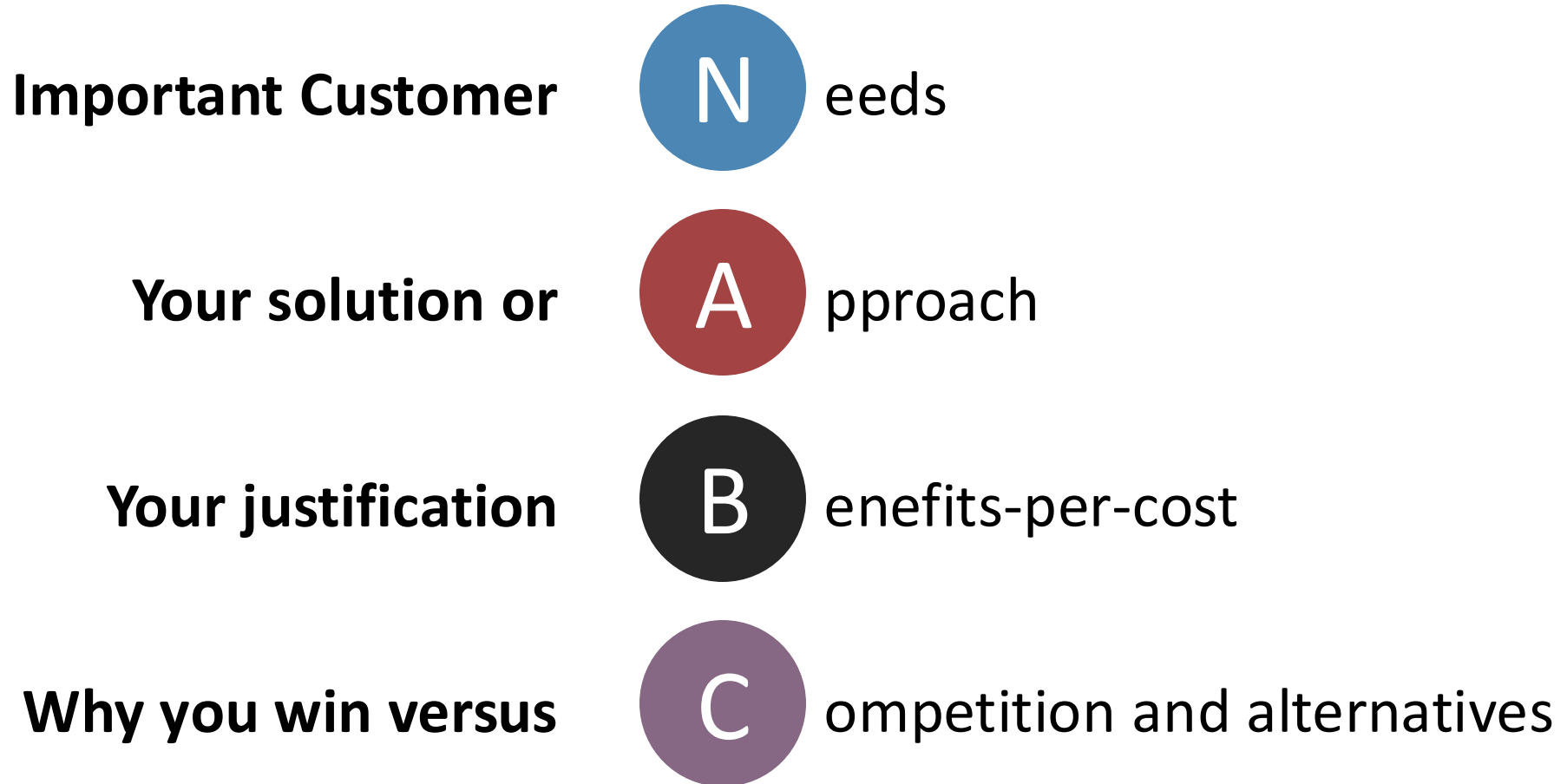A statement that includes:

The important customer/market (Need),

Our compelling (Approach) to meeting that need,*

The (Benefits) per-cost the customer will receive,

And why we'll beat the (Competition) and other options.

OUR POPULAR VALUE PROPOSITION COMPONENTS

Important Customer (N) eeds

Your solution or (A) pproach

Your justification (B) enefits-per-cost

Why you win versus (C) ompetition and alternatives

value creation forums ("VCFs")

noun

A FOCUSED exercise to tap into the full power of your new venture collaborators to create a Compelling Value Proposition
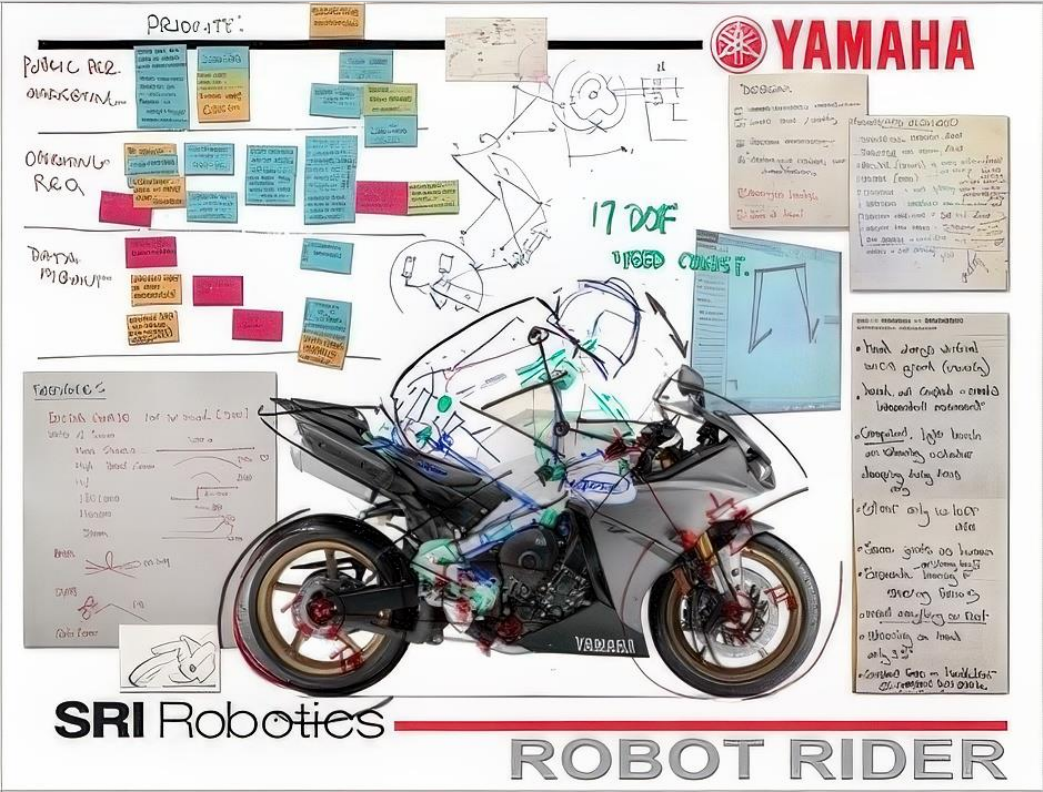
FIRST SIRI "VALUE CREATION FORUM" (VCF)

The Best Value Creation Forums Involve Many Points of View! Co-creating with Customers and Partners

VALUE CREATION FORUMS

...can be very powerful

VALUE CREATION FORUMS UNCOVER GOLDEN NUGGETS

Driving continuous value creation

What is a VCF?

- Meeting with experts about a specific Innovation to uncover highest value
- NOT A BRAINSTORMING EXERCISE!
- Recurring (every 2-6 weeks), structured feedback and learning meetings
- Formed around a specific market segment, product, or service area

Why do VCFs?

- Identify important customer needs and articulate **Golden Nuggets**
- Build compelling, quantitative Value Propositions, Elevator Pitches, and Innovation Plans
- Connect into the full resources of the enterprise
- Innovate at rapid, "exponential" rates to succeed- keep momentum going

Who should participate?

- Community of people with a shared interest in developing new science or technical discovery, or new business opportunities
- Innovation Champions with their Innovation Teams
- Topic experts

QUESTIONS?

Thank You!

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