

**Tech-Clarity**

*making the value of technology clear*


# **Social Networking in Product Innovation and Product Development, and Engineering**

*Jim Brown, President  
Tech-Clarity, Inc.*

# Agenda / Goals

- Introduction
- My Favorite Finns
- The Innovation Imperative
- Social Networking in Business
- Leveraging the Crowd
- Social Computing in Product Development
- Enhancing Social Collaboration
- Enabling Social Discovery
- What's Next? Planning for the Future

# Introduction - Jim Brown

- 
- Hall of Fame football player
  - All-American lacrosse player
    - Godfather of Soul
    - Cultural Icon
    - Jim Carrey

# Introduction - Jim Brown

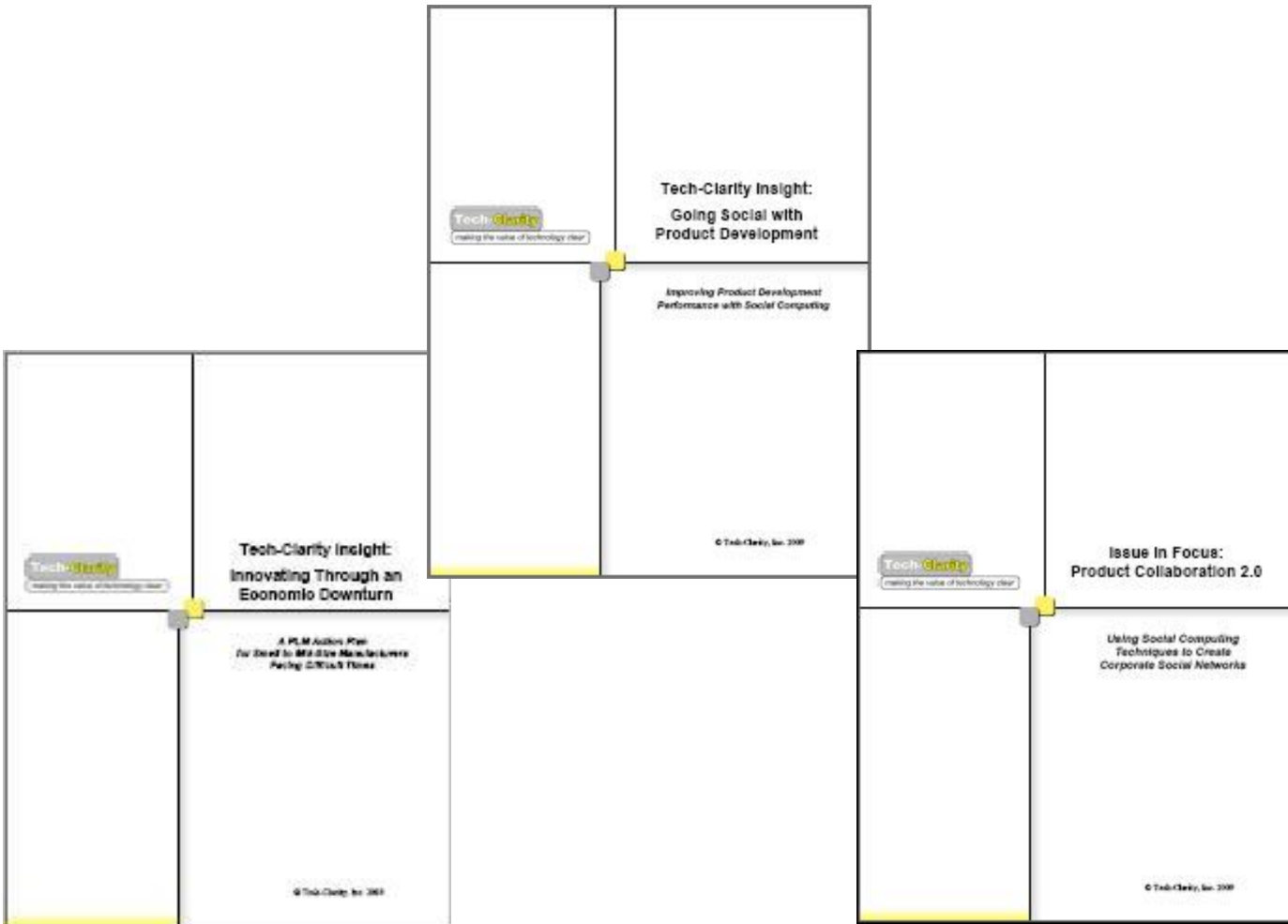


- Industry – General Electric Major Appliances
  - Manufacturing engineering, systems consulting
- Management Consultant – Andersen (Accenture)
  - Enterprise applications for manufacturers
- Software Industry – SCT (Infor) / Sequencia (OSI)
  - Product strategy, product management, marketing executive
- PLM Industry Analyst
  - Technology Evaluation Centers / PLM Evaluation Center
  - VP & Group Director, Aberdeen Group
  - Founder and President, Tech-Clarity, Inc.

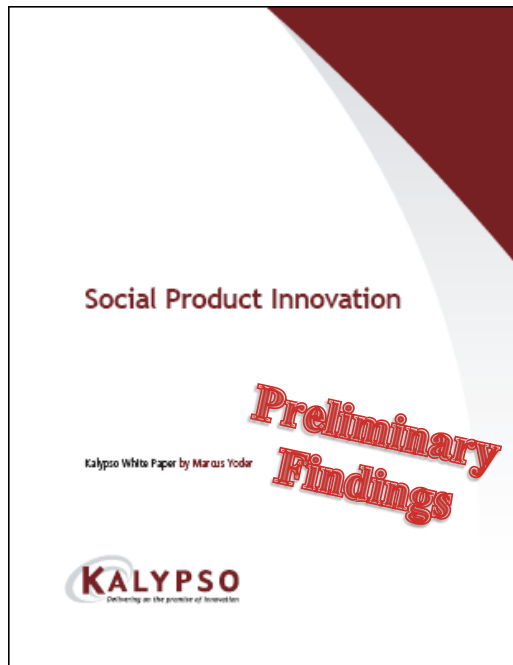
# My Favorite Finns



# Relevant Research



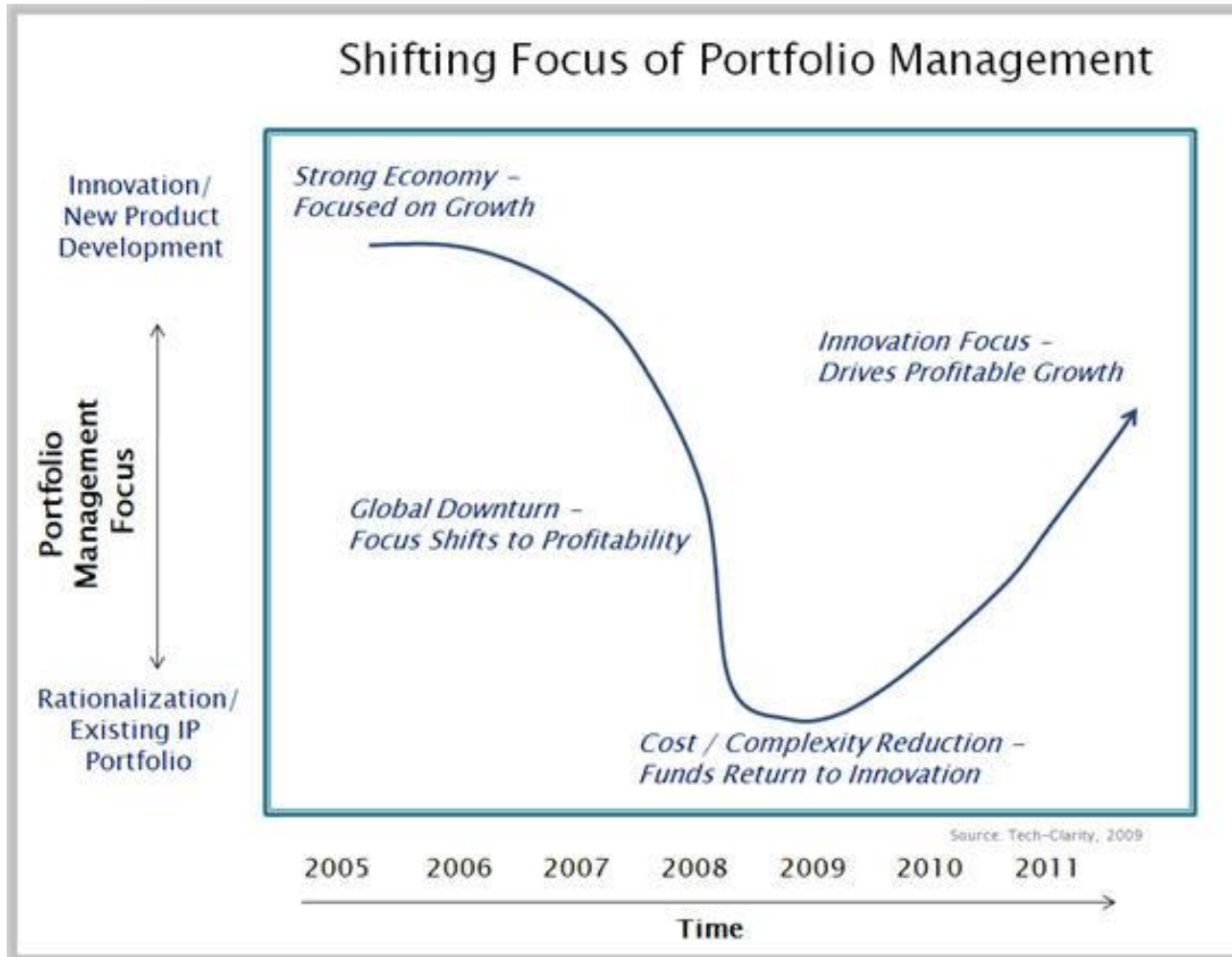
# Kalypso Research



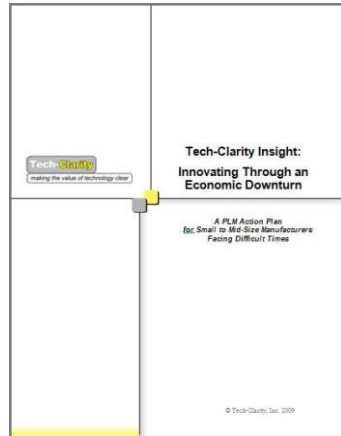
- Research Study on Social Product Innovation and Social Product Development
- Results not yet published
- Surveyed over 50 companies
- Focused Interviews
- Will be available from [www.kalypso.com](http://www.kalypso.com) in the future

# The Innovation Imperative

# Innovating in a Recovery

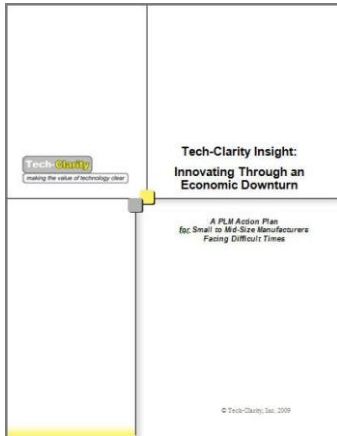


# Product Innovation



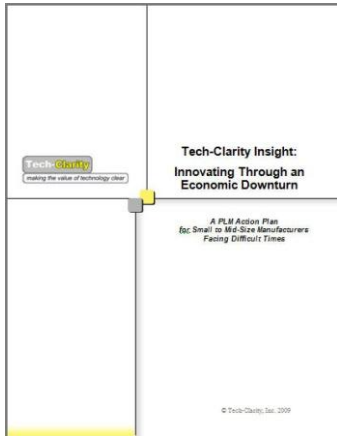
- Product innovation means focusing innovation energy on delivering customer value
- During a down economy, manufacturers couldn't afford to hunker down and wait for the storm to pass
- Manufacturers in a downturn had to innovate
- Now is the time for innovators to excel

# Reductive (Cost) Innovation



- Reductive innovation is product or process innovation focused on reducing cost
- Also known as “value engineering”
- The down market was a good excuse to go back to correct overdesigned or suboptimal designs that were acceptable during the good times
- Recovering markets will be increasingly global and competitive

# Process Innovation



- Process innovation means improving the efficiency of product innovation, product development, engineering, and manufacturing
- Allows manufacturers to spend more of their limited resources on developing winning products
- Important given predictions that manufacturers will stay lean

# Social Computing in Business

# Social Computing

facebook

Blogs

twitter

Wikis

## Social computing



From Wikipedia, the free encyclopedia

**Social computing** is a general term for an area of computer science that is concerned with the intersection of social behavior and computational systems. It has become an important concept for use in business.

Bright Ideas

Social Bookmarking

IM

YouTube

imaginatik

LinkedIn

# Social Computing Explosion

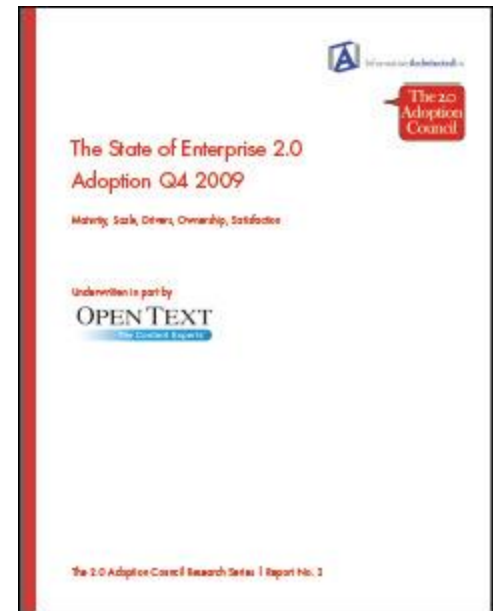
- **MySpace** has 200 million subscribers, if it were a country it would be 5th largest in the world
- The number of **text messages** sent/received in a day exceeds the population of the planet
- The time it took for a **product/technology to reach a market** audience of 50 million:
  - Radio – 38 years
  - Television – 13 years
  - iPod – 3 years
  - FaceBook – 2 years

SO WHAT DOES  
IT ALL MEAN



# Enterprise 2.0 Adoption

- My interpretation of the results relating to manufacturing:
  - **Manufacturers are very interested in social computing**
  - **The early adopters are hard at work figuring it out**
  - **Progress has been cautious** (for the most part)



# Manufacturer's Viewpoint

*“Innovation is not only about products and services. It is also about optimizing every touch point of every customer relationship.”*

Murray Martin

CEO

Pitney Bowes



# Manufacturer's Viewpoint

*“It’s important to have open conversation with customers.”*

Ryan Murphy

Principal Program Manager for PLM

Microsoft Entertainment and Devices



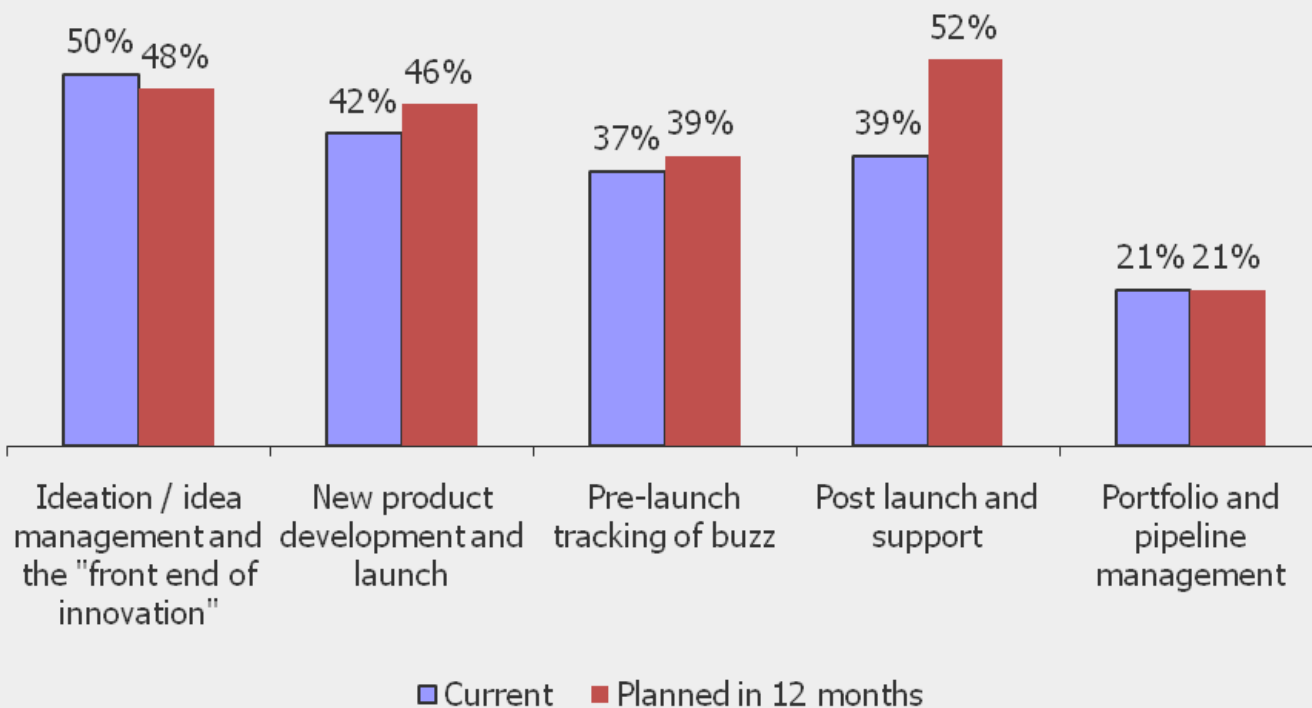
# Businesses Leveraging Social Media

- **Example: Sentiment Analysis**
- “Mining the Web for Feeling and Not Facts”
  - Opens a “window into the **collective consciousness** of Internet users”
  - **Opinions** are a kind of “**virtual currency**”
  - Social media offers a “rich vein of **market intelligence**”



# Social Computing in the Product Lifecycle

**Portions of Product Lifecycle Using Social Media or Social Computing**



# Leveraging the Crowd: Social Computing in Product Development

# Crowdsourcing

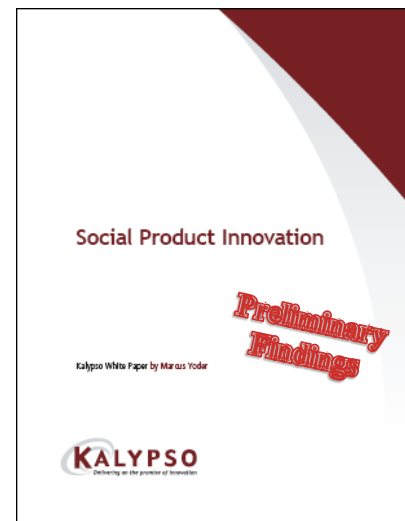


- Crowdsourcing brings “Voice of the Customer” into product management across the product lifecycle
  - Innovation and ideas
  - Product validation and launch
  - Customer feedback
- Most use of social networking communities today is for outbound communication

# Manufacturer's Viewpoint

*“We use social media to gather ideas for product improvements, new product development idea gathering and tracking buzz for their product before launch.”*

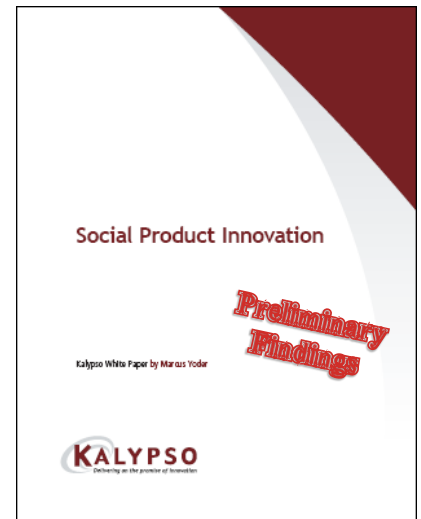
Global Consumer Product Company  
*Food and Home / Personal Care*



# Manufacturer's Viewpoint

*“Not sure if we will start using social media for getting product ideas very soon, it will still be more for using social media to create awareness among masses.”*

North American Electricity Provider



# Innovation and Ideas

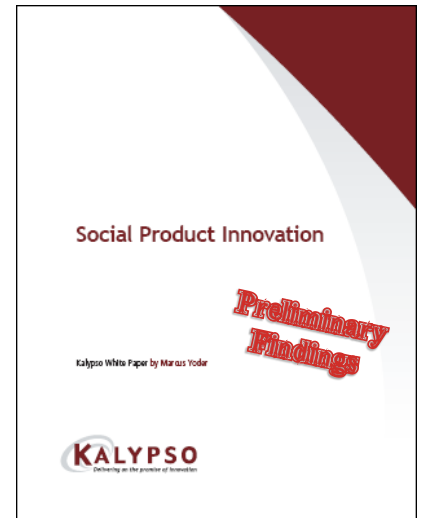
- Customer communities
- Competitors
- Formal open innovation
- Tournaments



# Manufacturer's Viewpoint

*“We utilize LinkedIn, and has created a group and to talk about 1,800 customers.”*

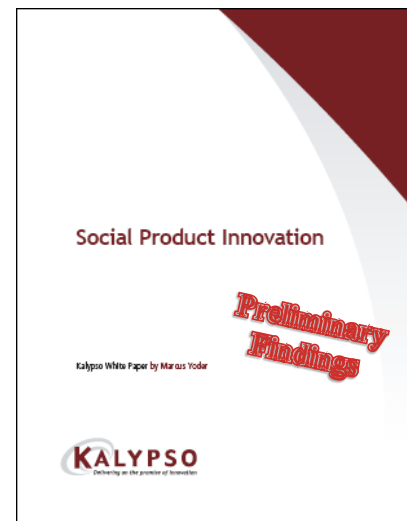
Software Company



# Manufacturer's Viewpoint

*“Some new technologies groups are looking at things from a science standpoint and they have engaged social media tools to put questions out there and gathering responses - sometimes paid. Open innovation combined with internet.”*

Materials Industry



# Product Validation

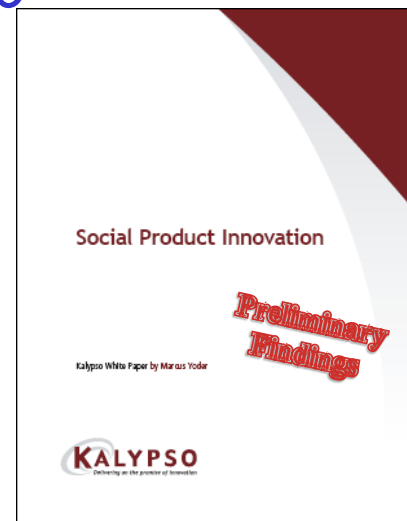
- Testing ideas
- Virtual focus groups
- Creating and tracking buzz
- Launching products



# Manufacturer's Viewpoint

*“Tested packaging concepts on Twitter for a small organic cereal company. Developed the product, wanted to test packaging concepts. Found the organic food channels, and began messaging. Recruited 60 people, got their addresses, sent them the packaging and asked for their opinion. All responded, and some wanted to continue to engage.”*

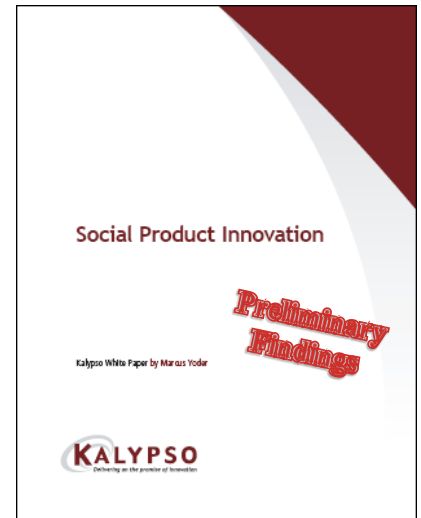
Design Services Company  
*Working with Food Company*



# Manufacturer's Viewpoint

*“We launched a product with a coupon on Facebook, to redeem for the new product. And majority were feeding back information. Began conversation that extended.”*

Personal Care Company



# Customer Feedback

- Support forums
- Public sites
- Blogs
- “Close the loop” on product innovation

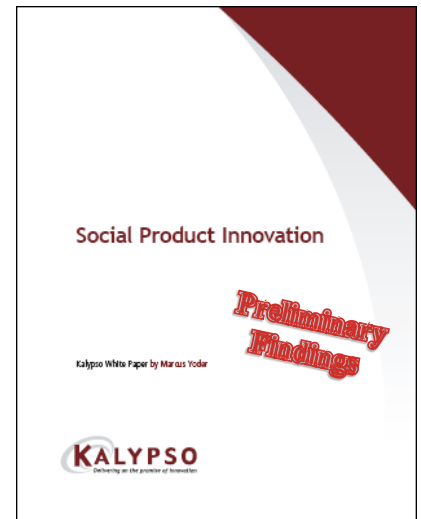


# Manufacturer's Viewpoint

*“We actively monitor certain topics in product marketing.”*

*“Six of our last 25 features, came from listening to the social media chatter.”*

Software Company



# Leveraging the Crowd: Social Computing in Product Development

# Social Computing in R&D



- Social computing enables product developers to:
  - Enhance product development team execution and collaboration
  - More naturally capture and share product knowledge and expertise
  - Enable the discovery of new IP and product value

# Manufacturer's Viewpoint

*“Very often we need instantaneous feedback. You can see who is online immediately and get the information that you need immediately. You don't have to think about it, it's just a natural part of the product development process.”*

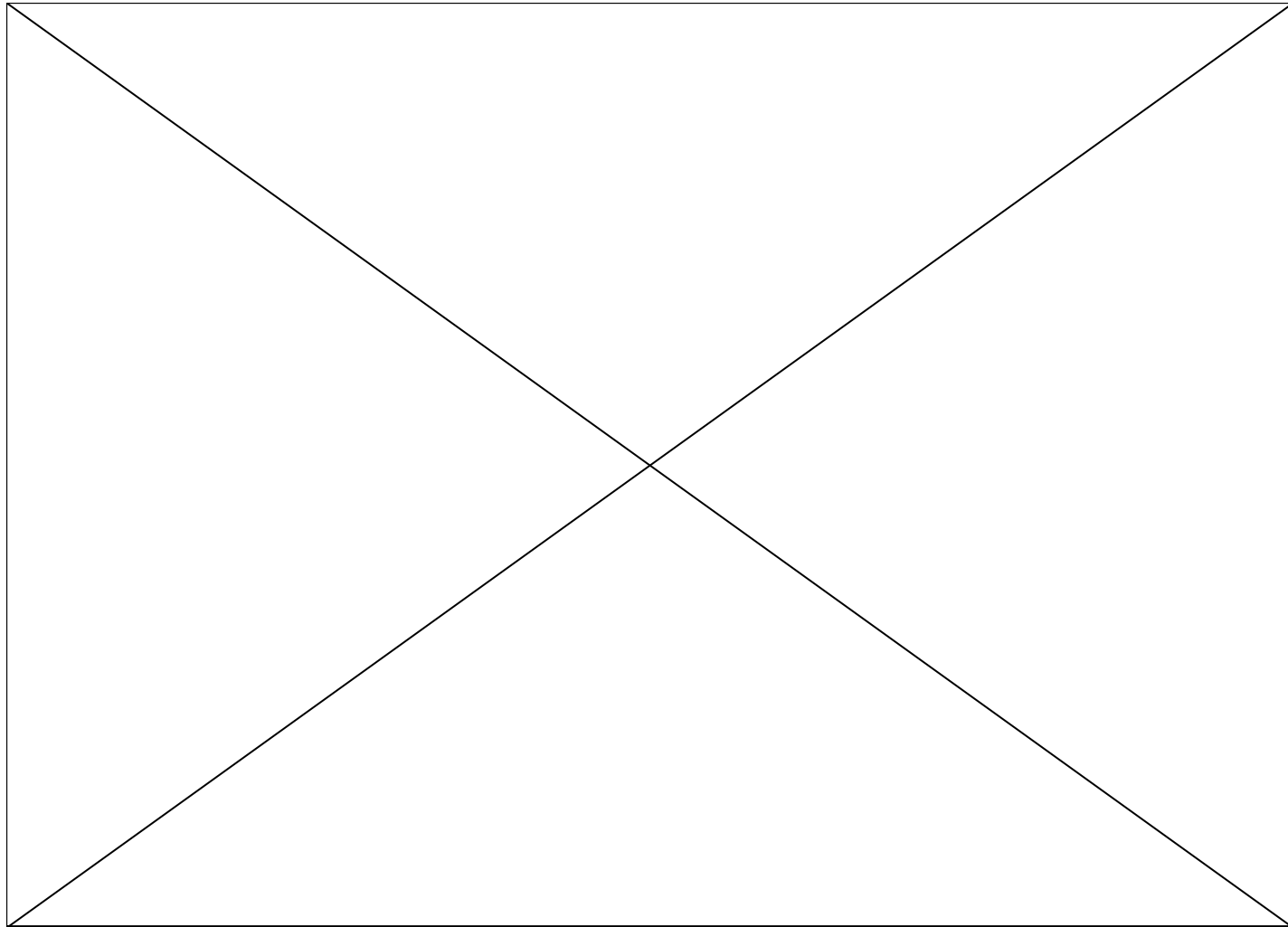
Ryan Murphy

Principal Program Manager for PLM

Microsoft Entertainment and Devices



# Social Innovation in Plain English



# Manufacturer's Viewpoint

*“Pitney Bowes is an innovation-driven company. In addition to a significant annual investment in research and development under a top-notch team of scientists and strategists, we take our forward-thinking approach to every organizational level and every employee. We engage employees through a variety of mechanisms such as the use of social networks for sharing ideas about new offerings, new markets and new ways to deliver customer value.”*

Murray Martin

CEO

Pitney Bowes



# Findings from COFES 2009

- Social computing in PLM is a **real and compelling**
- The intersection of social computing and engineering is **happening – although slowly**
- There is a **lot of potential value**
- There are a lot of **potential barriers**
- Social computing is **not just for the younger generation** (although they are more likely to just expect it)
- As an industry, we are **very early in the maturity of our vision** to use these technologies, we have a lot of experimentation left before there is an accepted “best practice” approach

# Manufacturer's Viewpoint

*“We will not design a plane on Facebook!”*

Boeing Participant  
COFES 2009

# Agreed – No Planes on Facebook

- **Facebook (as an application) is meaningless to developing an airplane:**
  - What relevance do status comments and photos have to do with serious engineering?
  - How will we protect intellectual property?
  - What does Facebook know about business processes or how to manage them?
  - What does Facebook know about engineering data? CAD files? Projects? Engineering in general?
  - Why would I trust my business performance to a technology platform like Facebook that doesn't appear stable or perform well? (sorry Facebook, that is just my practical experience not a sound technical analysis)
  - How do I have time to pay attention to this in addition to everything I already do?
  - How do we address security concerns?

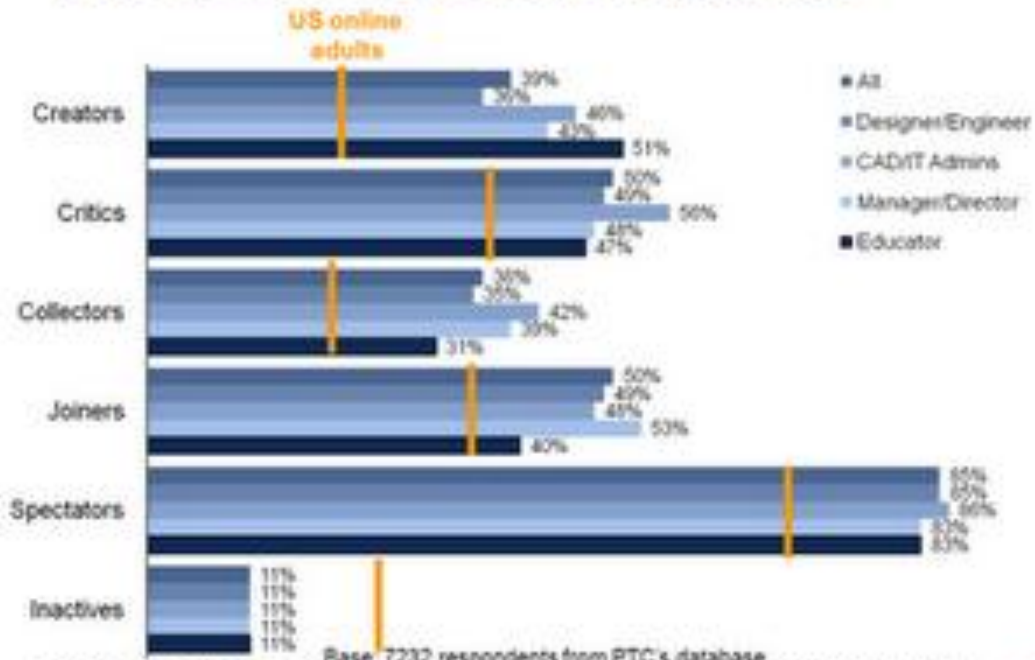


# Social Computing Concepts in PD

Concept	Facebook / Twitter / Etc.	Product Development
Status / Tweet	Feeling like eating ice cream	Having trouble designing fan housing
Chat	Go to the movies tonight?	Are the customer requirements done?
News Feed	Keep up with friends	Project progress / issues / status
Links	Funny cartoon on Dilbert	Link to most recent design files
Pictures	Aunt Tilda's new dress	Concept sketches of new product
Videos	Little Johnny gets a new tooth	New product launch ads
Applications	Make me look like Mickey Mouse	Allow me to sketch a 3D concept
Like / Dislike	Like friend going to Paris	Feedback on prototype (VOC)
Messages	Haven't seen you since high school!	Project deliverables late, need help!
Comments	That looked like fun!	Feedback on issue, design, or concept
Friends	Bob, Linda, Uncle Joe, ...	Team members, customers, experts
Groups	Family, Work Friends, Sports Team, ...	Projects, skillsets, departments
Followers	Friends, ???	Customers, downstream departments
*Blogs	My trip to Finland	New technology strategy
*Wikis	Favorite rock band hairstyles	Design standards and templates

# Is R&D Ready?

## PTC customers are extremely active



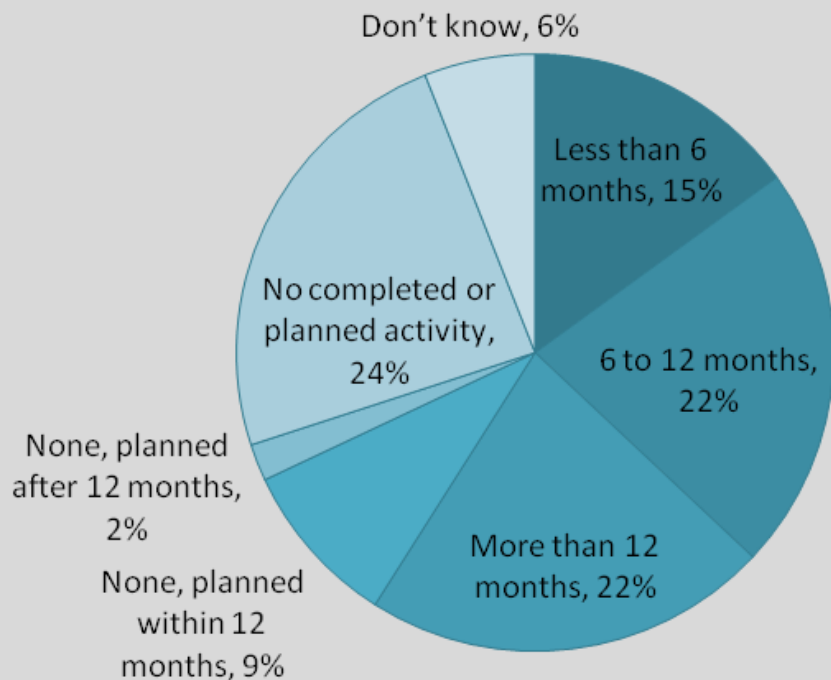
Source: A commissioned study conducted by Forrester Consulting on behalf of PTC, April, 2009



*“About nine out of ten (specifically 89%) of those surveyed use social media and Web 2.0.”*

# Companies are Getting Started

## Use of Social Media for Product Innovation



Social Product Innovation

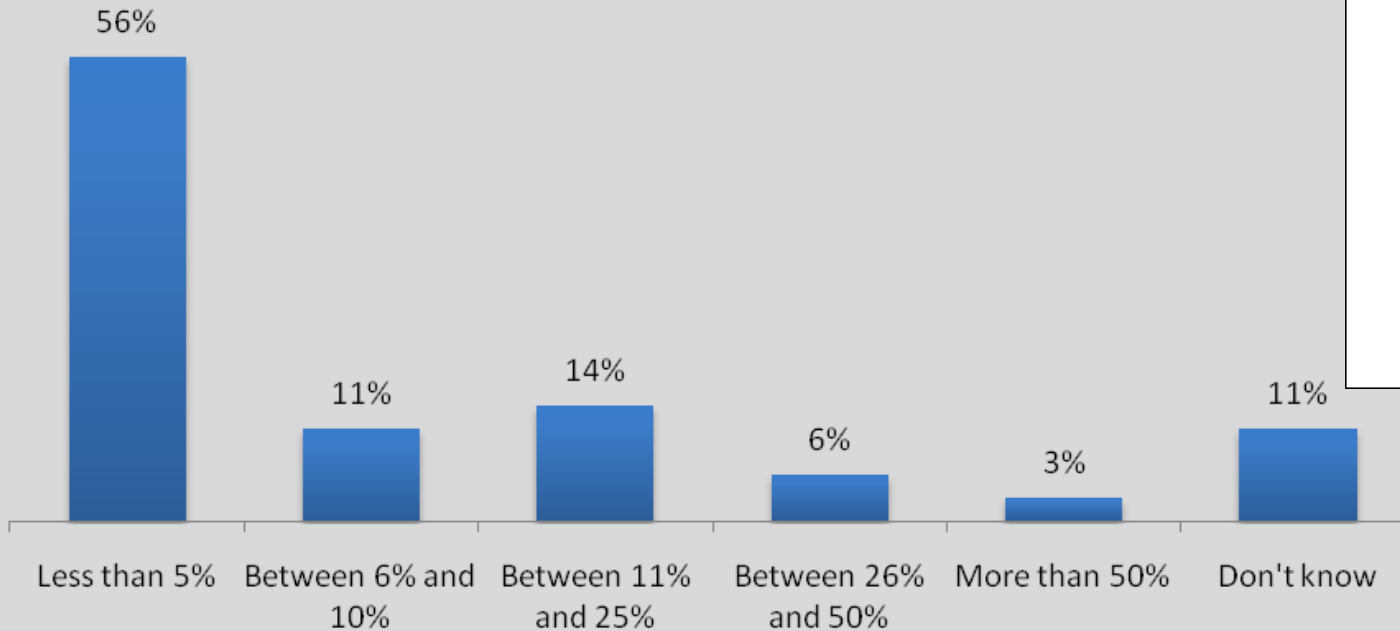
Kalypso White Paper by Marcus Yoder

**Preliminary Findings**



# Most are Dipping their Toes

## Percent of Product Innovation Initiatives Using Social Media or Social Computing



Social Product Innovation

Kalypso White Paper by Marcus Yoder

**Preliminary Findings**



# Enhancing Social Collaboration

# Collaboration versus Discovery



- Collaboration – Working and sharing ideas with **people you already know**
- Social Networking in Product Development – **Discovering new people and ideas** that can further your product innovation and engineering efforts
- In short, the difference is about discovery

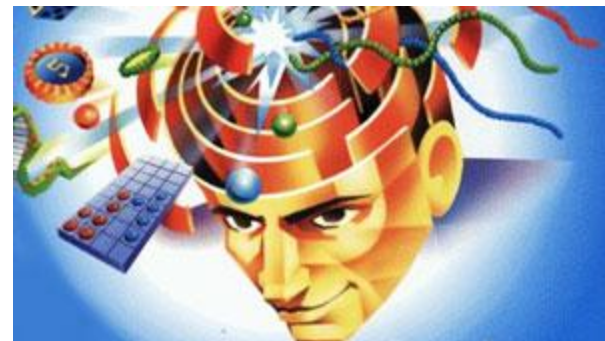
# Manufacturer's Viewpoint

*“We have a comprehensive program to shift product development capabilities internally. Part of our strategy is to include the whole product development community to allow them to communicate, share, and iterate around product information.”*

Ryan Murphy

Principal Program Manager for PLM

Microsoft Entertainment and Devices



# Collaboration is Maturing

## From:

- Drawings / 2D
- Static
- Parts
- Viewable
- Reviews
- Product only
- Engineering centric
- Asynchronous
- Representations
- Engineering

## To:

- 3D
- Dynamic 3D (can be interrogated)
- Mockup assemblies, products
- Dynamic 3D (can be changed)
- Simulate, analyze and update online
- Includes manufacturing information
- Smart (embedded product data)
- Real-time, online collaboration
- Lifelike interaction
- Everyone



# Extending Collaboration to Communities

- Presence detection
- Messaging
- Interactive file sharing
- Status replaces day-to-day “water cooler” conversations
- Virtual “community space” as a central location for information
- Threaded discussions
- Extend beyond Engineering - Manufacturing, Purchasing, Quality, Service, and others



# Manufacturer's Viewpoint

*“We have a program to enliven collaboration within the four walls of Microsoft using social computing.”*


Ryan Murphy

Principal Program Manager for PLM


Microsoft Entertainment and Devices

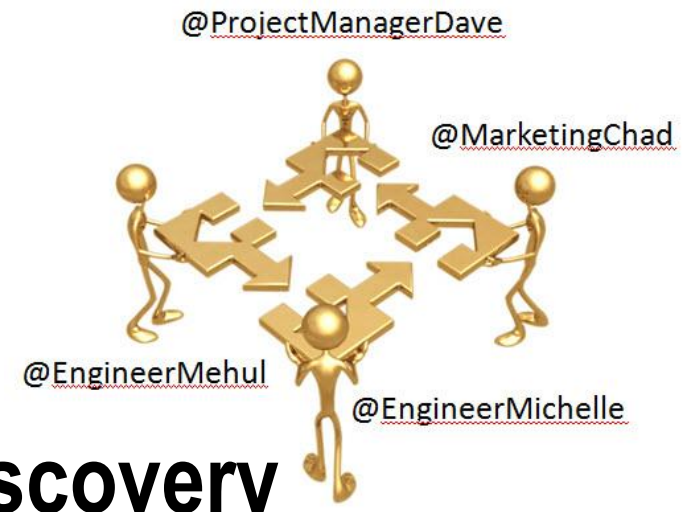


# Extending Traditional Collaboration

- 
- A product manager checking on their launch date:
    - The status and schedule look fine on paper
    - Is the packaging issue resolved?
    - Is it going to be?
    - What could go wrong?
  - Formal status – inaccurate
  - Telephone conversation – no accountability
  - e-Mail - good luck, outdated, too many threads

# Capturing Product Knowledge

- 
- Social computing in product development
    - Develops a digital record of the product development process
    - Captures and stores false starts, brainstorming, discussions, and other interactions
    - Records design and decision-making history
    - Opens history for corporate reuse
    - Turns collaboration into a corporate asset
    - Could be associated to the product and the project to form a permanent record of the process



# Enabling Social Discovery



- “Social discovery” helps companies find new people whose knowledge can be tapped.

# Manufacturer's Viewpoint

*“We are building communities of practice hosted by experts in specific product development fields. These leaders moderate discussion boards, post articles, maintain a content repository for documents, and even point to articles on the web.”*

Ryan Murphy

Principal Program Manager for PLM

Microsoft Entertainment and Devices



# Tagging

- Associate content with people, events, or topics
- Keyword tagging
- Using “#” tagging or “hashcodes” in Twitter
- Social tagging – tagging your online presence
- Associating the person to the context allows the tag to be followed to see or learn more about the person tagged

# Social Discovery

- Search repositories for:
  - Relevant projects or information
  - Information (if authorized) to learn from documented experience
- Social tagging extends capabilities
  - Find out who was involved
  - Communicate with those people
  - Get the real story
  - Tap into their extended networks to discover even more ideas and people

# Manufacturer's Viewpoint

*“All identified participants will have a profile, and can register as an expert in a community of practice. Everybody will be catalogued so we can find the right person with the right expertise.”*

Ryan Murphy

Principal Program Manager for PLM

Microsoft Entertainment and Devices



# Social Discovery Outside Enterprise

- Social discovery outside the enterprise enables:
  - Open innovation
  - Crowdsourcing

# What's Next? Planning for the Future

# Social Computing in Product Development

- Manufacturers are very interested in social computing
- The early adopters are hard at work figuring it out
- Progress has been cautious (for the most part)



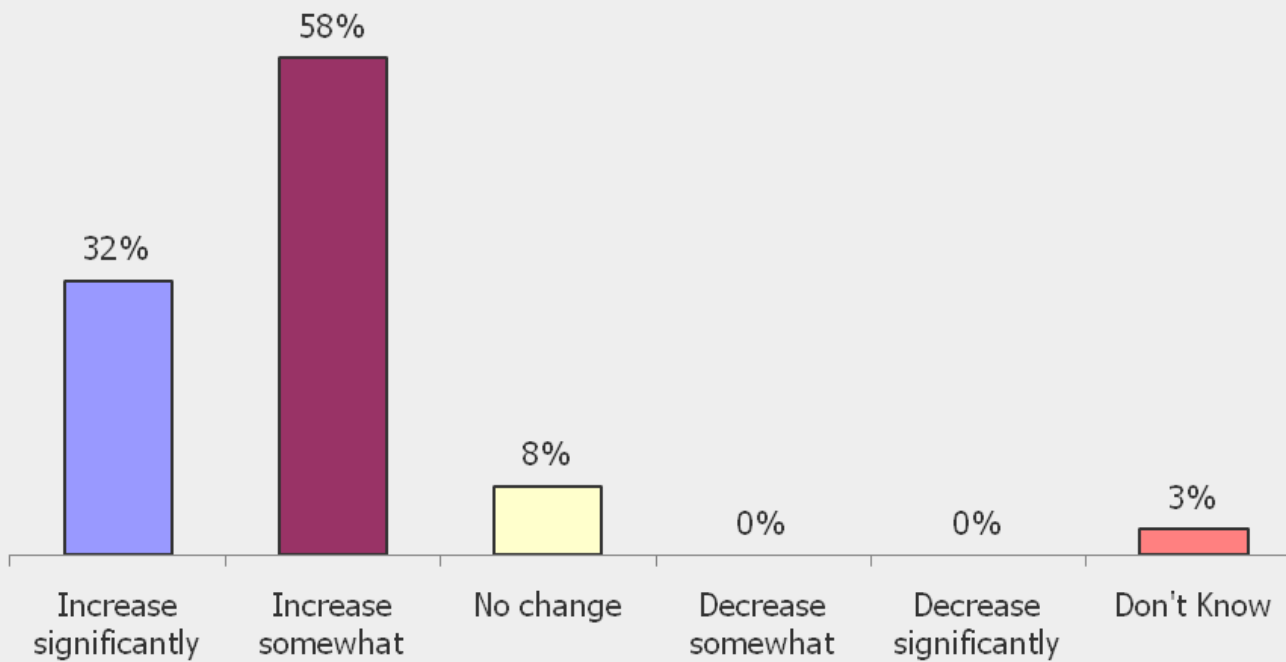
# Social Computing Predictions

- Most manufacturers will start with the low-hanging fruit of improving collaboration
- Most will start internally
- Manufacturers more likely to adopt social computing when they are incorporated into applications they trust (such as PLM), which will protect their intellectual property (IP)
- There will be significant value gained by those manufacturers that adopt social computing to improve product innovation, product development, and engineering performance



# Don't Get Left Behind

**Social Media & Social Computing Use for Product Innovation, Development, and Management (change over next 12 months)**




Social Product Innovation

Kalypso White Paper by Marcus Yoder

**Preliminary Findings**



# Key Takeaways

- 
- Social networking in product development:
    - Is more than just collaboration
    - Makes collaboration better
    - A significant, complementary addition to current product innovation, product development, and engineering toolsets
    - An important evolution in product development (processes and tools)
    - Showing promise and here to stay
  - Learn. Pilot. Experiment.

**Tech-Clarity**

*making the value of technology clear*

# Thank You

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