Innovation in the Digital Age
25 June 2015

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Suna Polat

Director, Collaborative Innovation and Social Product Development Practice

- Joined CIMdata in June 2014
- 24+ years of industry and R&D experience
  - Technology development
  - Product development
  - Innovation Management
  - Leading change and adoption
- Led strategic innovation and productivity capability implementations at P&G R&D
  - Modeling and simulation (M&S)
  - Connect & Develop (Open Innovation)
  - Knowledge Management
  - Social Technologies for Innovation
- Education: PhD in Chemical Engineering
Business Transformation through Innovation

A personal experience story

- Worked in P&G’s diaper business between 1996 and 2007
- 1\textsuperscript{st} assignment: Downstream process development
- 2\textsuperscript{nd} assignment: Upstream process technology development
- 3\textsuperscript{rd} assignment: Upstream material technology development
- 4\textsuperscript{th} assignment: Connect & Develop (Open Innovation)
- 5\textsuperscript{th} assignment: R&D Effectiveness

Business Transformation

From \textit{Product} (Diaper) To \textit{Job to Be Done} (Baby Care)
Disposable Diapers: High-Tech, Low Cost

Sample of consumer experience innovation vectors

- Look like baby wear!
- Be quiet... but hold secure!
- Snug, but not tight!
- No leaks please!
- Keep my baby dry all night long!
- Breath... I want my baby’s skin healthy!
- Cost <20 cents

Image credit: Pampers.com
Recognize Your Innovation Constraints

P&G Diaper Business: Manufacturing platform limited the product design space

Single mechanical shaft driven

Modular units; digital integration

Leading Indicators

- Changes were expensive and time consuming
- Could not do meet business growth goals
Embrace Systemic Innovation

*Start with consumers; understand fundamentals; focus on growth; be patient*

1. Understand moms emotionally
2. Develop ideal product models
3. Define family of products
4. Define enabling technology platforms
5. Plan projects and strategically manage portfolio of new ideas

Pampers became a $10 Billion Dollar Brand in 2012
Understand Innovation Speed Constraints

"Innovate how you innovate to mitigate them"

- Can we accelerate our learning cycles?
  - Modeling & Simulation
  - Rapid prototyping

- Can we find better ideas and ready solutions?
  - Connect & Develop

- Can we improve our innovation process management and decisions?
  - Front End Innovation
Collaboration: An On-going Challenge

Despite technology advancements and on-going experiments

Typical practices were:

- Capture insights, data and decisions in MS documents
- Save in personal computers and “functional” network drives
- Share/discuss in meetings, calls, emails (not searchable) for decisions
Welcome to the New Age of Innovation
Innovation with Smart Connected Products & Machines

Technology Drivers
- Cloud
- Sensors
- Cameras
- Mobile
- Custom materials
- Mfg, e.g., 3D printing

Challenges
- Increased complexity
- Need for high agility
- Massive scalability
- Consumer cost-sensitivity

Seamlessly connect your devices to The Internet of Things

AT&T M2X is a cloud-based fully managed time-series data storage service for network connected machine-to-machine (M2M) devices and the industrial Internet of Things (IoT). From trucks and turbines to vending machines and freight containers, M2X enables the devices that power your business to connect and share valuable data.

Industrial Age versus Innovation Age

Pace of Innovation is increasing with increased connectivity

Industrial Age
- Businesses in charge
- Linear goals; Annual planning cycles
- Hierarchical power
- Task management
- Product features

Information Age

Innovation Age
- Consumers in charge
- Gain brand loyalty; Continuous learning
- Collaborative power
- Collaboration
- Jobs to be done

Challenge: How to balance Scale and Agility Efficiency and “More” innovation Discipline and Empowerment
Collaboration in the New "Digital" Age of Innovation
“A global company needs to collaborate globally. If you have the power of twenty divisions around the world and you’re not leveraging knowledge from those places, you are losing out”

John Mannisto
Engineering Director, Simulation-Based Design
Whirlpool Corporation
“Get the kids involved: This is a new technology and new behavior. Get your kids involved, and learn from outside of the office—social media is outpacing corporate collaboration”

“Demand better tools from your solutions providers, but don’t use lack of appropriate tools as an excuse to not move forward. Own your journey; get involved—pilot, play, produce.”
Crowdsourcing with Employees

**AT&T example (1 of 3)**

*Members Can Solve a Specific Business Need...*

**How it Works: Challenges**

- Challenge Issued
- Idea Shared
- Collaboration & Rating
- Challenge Review
- Pairwise Voting
- Social & Cash Winners

*(Courtesy of MindJet)*
Crowdsourcing with Employees

AT&T example (2 of 3)

...Or Share an Idea Any Time Inspiration Strikes

How it Works: Start It!
- Season Begins
- Idea Shared
- Collaboration & Rating
- Advisor Review
- Pairwise Voting
- Angel Pitch
- Funding (if selected)

(Courtesy of MindJet)
Crowdsourcing with Employees

AT&T example (3 of 3)

Results

- Initiated in 2009: Live to 200K+ employees on day one

- By end 2013: 120K employees, 25K ideas

- By mid 2014: 130K employees, 31K ideas, $44M seed money committed to projects
Internal Peer-to-Peer Collaboration

Communities of Practice (CoP) ➔ Communities of Innovation

• Concept of CoP has been around long time and many companies have formal CoP’s

• Members choose to participate by the nature of their interest and passion (opt in versus assigned)

• Members
  ▪ help one another solve tough problems
  ▪ tap collective experience and expertise
  ▪ accelerate to knowledge and insights

• Social media and social collaboration technologies make awareness and participation easy

• Leadership encouragement and recognition is important
Harnessing the Power of External Crowd

Open Innovation (1 of 2)

- Consumers
- Enthusiasts
- Partners / suppliers
- Entrepreneurs
- Academia

- Alumni
- Experts / Consultants
- Retirees / Students
- Equity firms
- Venture capitalist
Harnessing the Power of External Crowd

Open Innovation (2 of 2)

Example Open Innovation and Co-Creation Services
Collaboration with Consumers

Now engaged at every stage of innovation

Linear model where consumer interaction is more intense in earlier stages

Current model where consumers are engaged at every stage

BIG “consumer” data

Image credit: http://www.altitudeinc.com/smart-connected-products-need-good-design/
External Crowdsourcing

Examples from the auto industry: Ideation as well as marketing!

Volkswagen Hover Concept Car was one of three based on more than 119,000 ideas submitted to the project website. The website received over 35.6 million views, nearly 13 million visitors.

Fiat Mio Concept Car created based on more than 11,000 ideas submitted by 17,000 subscribers in more than 120 countries.


Consumer Communities Example

Tremor

- Initiated by P&G in 2002 for “word of mouth” marketing. Acquired by MKTG in 2014
- Vocalpoint community of 1+ million women and moms
- Vocalpoint community provides ideas and insights

We create talkable, shareable experiences that ignite a wave of advocacy for your brand.
Co-Creation

Example: GE Appliances – FirstBuild – a start up within a big company (1 of 2)

- 35000 ft. sq. microfactory at Belknap Campus, University of Louisville, KY.
- Partners: Local Motors, MakerBot, TechShop, Stratasys Ltd. and AllSeen Alliance
Co-Creation

Example: GE Appliances – FirstBuild – a start up within a big company (2 of 2)

- Commercialized “Easy Load Oven” at 5x speed vs. typical idea to market timeline at GE Appliances
- Paragon Induction Cooktop came from a student at Stanford University
- Using Kickstarter to identify ideal pricing point for Paragon Cooktop
Co-Creation

Example: Is Local Motors reinventing car making?

- Designers, hobbyist and enthusiasts develop design concepts online.
- Concepts can be turned into physical products at Local Motors’ growing number of microfactories with state of the art manufacturing technologies.
“The future has arrived — it’s just not evenly distributed yet.”

William Gipson

Many success stories ...
Many solutions and services...

Why so many enterprises are still struggling?
1. Culture and Mindset

- Aligning culture with a new strategy, especially in large organizations, is hard

“Culture eats strategy for breakfast”

*Peter Drucker*

“Culture change feels like trying to lift the chair you are sitting on”

*A P&G HR Manager*
Open Innovation Implementation

An example: GE

GE Open Innovation

GE understands solving the world’s toughest problems through advanced manufacturing techniques and processes requires collaboration. By crowdsourcing innovation—both internally and externally—GE is improving customer value and driving advancements across industries. By sourcing and supporting innovative ideas, wherever they might come from, and applying GE’s scale and expertise, GE’s approach to open innovation is helping to address customer needs more efficiently and effectively.

Open Innovation Manifesto

We believe openness leads to inventiveness and usefulness.

We also believe that it’s impossible for any organization to have all the best ideas, and we strive to collaborate with experts and entrepreneurs everywhere who share our passion to solve some of the world’s most pressing issues.

We’re initiating a fundamental shift in the way we do business - this is what we’ll stand for in our open collaboration efforts and how we will operate.
Open Innovation Implementation

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- Customer focus, imagination, courage, expertise, inclusiveness, and clear thinking will always guide our collaborative effort.

- We will openly celebrate the efforts of lead solvers who have submitted winning solutions within our public collaborations.

- We’ll collaborate with transparency – publishing evaluation criteria, rules, compensation and IP rights at the launch of our engagements.

- We believe ideas should be compensated - and compensation pools will always reflect level of impact, effort, commercialization risk and IP rights.

- We’ll provide access to pools of IP to enable the Global Brain to create new and beneficial outcomes.

- We’ll never stop experimenting, collaborating and learning – we’ll get smarter as we go, and the Global Brain will evolve and grow with us.

To learn more about past quests, watch this Google+ Hangout and read the press release and the following articles from GE Reports:
Ford Initiates Open Innovation Approach to Finding Innovative Mobility Solutions; Launches Innovate Mobility Challenge Series

Jul-15-2014 4:30 AM ET

Ford Drives into the Future with Open Innovation

July 20, 2014 by IdeaConnection & filed under Innovation.

Ford today announced the launch of its OpenXC vehicle application research platform. Open-source hardware and software toolkits are now available to anybody who’s interested in building hardware and on the joint effort with BugLabs (what

Every week there are new stories about companies launching open innovation and crowdsourcing initiatives. They hope they can successfully convert the awesome brainpower of the crowd into concrete innovations that propel them ahead in the marketplace.

One of the latest corporate giants to initiate an exciting new open innovation venture is the Ford Motor Company.
Contrasting message at Ford’s website

Ford and its suppliers invest billions of dollars each year and have thousands of employees around the world engaged in research and development of new ideas. If Ford has something development that is similar to a disclosure, this can cause confusion about the origin of the idea. That is why we avoid evaluating ideas that could create a conflict with our internal efforts. Determining who developed certain aspects of an idea can be a complex and time-consuming process involving hundreds of people. There is considerably less risk if we develop ideas from the people we employ. The vast majority of the ideas used by Ford Motor Company originate with our employees or suppliers.
Need New Age “Leadership”

Motivating and empowering employees

- Create a culture of engagement and collaboration
- Activate intrinsic motivation
- Connect people and ideas – spark “network” effects
2. Incoherent Management of Innovation

Multiple innovation spaces need to be connected and coordinated
3. Confusing Solutions Landscape

Overlapping approaches, solutions and terminology are confusing or conflicting

Clients may be hesitant to invest because they don’t understand how solutions fit with their organization, culture and existing solutions

All areas are supported by a number of overlapping solutions
Objective 1: Define an innovation system framework and terminology including benefits, challenges, strategies and solutions by interviewing Chief Innovation Officers and thought leader solution providers

Objective 2: Disseminate learning and outcomes in a white paper, webinars and workshop discussions

Timeline:
- Finalizing sponsors – June 2015
- Perform research and execution – July - Sep 2015
- Disseminate learning and outcomes – Oct, Nov 2015
Title: “Collaboration and Innovation in the Digital Age”

Date / Location: Oct 7 and 8, 2015; Louisville, Kentucky

Format: Keynote speakers, panel discussions, co-creation

Example topics to be explored:

- How to balance openness and speed with security and protection of intellectual property (IP)?
- How to integrate the fuzzy front end with PLM?
- How to address cultural challenges in adopting new business models, such as co-creation, and digital technology solutions?

------------ Will tour GE Appliances FirstBuild Microfactory --------------
Conclusions

Conclusions

CI must be a critical element of PLM as an innovation platform

● Speed of innovation in “digital” new era with smart and connected products has become even more important.

● Companies need to embrace systemic innovation with strategic platforms, capabilities and solutions to achieve goals

Key challenges:

● Aligning the culture to the new innovation strategies and approaches

● Connecting and coordinating innovation across multiple organizations, functions, spaces

● Understanding landscape of innovation solutions and services to make investment decisions
For more information, contact

We look forward to hearing from you

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