



The Next Step in Open Innovation

Berkeley Innovation Forum
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Beginning of today's discussion

Who?

Introduction to McKinsey Technology Initiative

What?

Description of distributed co-creation

When?

Reasons why distributed co-creation is happening now

Why?

Benefits of distributed co-creation

How?

Aspects of implementing distributed co-creation

McKinsey Technology Initiative

Mission

Explore the **impact of technology on business and the economy**

Aspiration

- Co-develop **distinctive, forward-looking perspectives** on the impact of technology, taking a global perspective
- Create a **platform to engage with leading institutions** and executives on strategic and business opportunities
- Create a **vehicle for thought-leadership on cross-cutting issues**, in collaboration with sectors, functions and geographies

Design principles

- **Iterative and “evergreen” knowledge agenda**
- **“Open architecture”** through interactions with thought leaders
- **Collaborations with leading institutions** around the world

Something is happening: Distributed co-creation



- Deployed a network for development of motorcycles, **to lead the market in Southeast Asia**



- Opened proprietary geological data from a Canadian mine, **to discover millions of additional ounces of gold**



- Developing a micro-television networks with 50% self-produced , and 50% user-generated content, **to become the most watched channel hosted on YouTube**



- Used consumer insights shared by women to develop new cosmetics, **becoming the leading cosmetics company in South Korea**



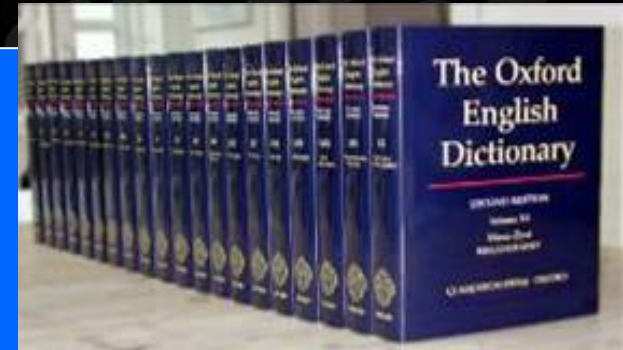
- Developed Knowledge-In, a system for answering local questions, **to become the lead search engine in South Korea**

Distributed co-creation: A definition

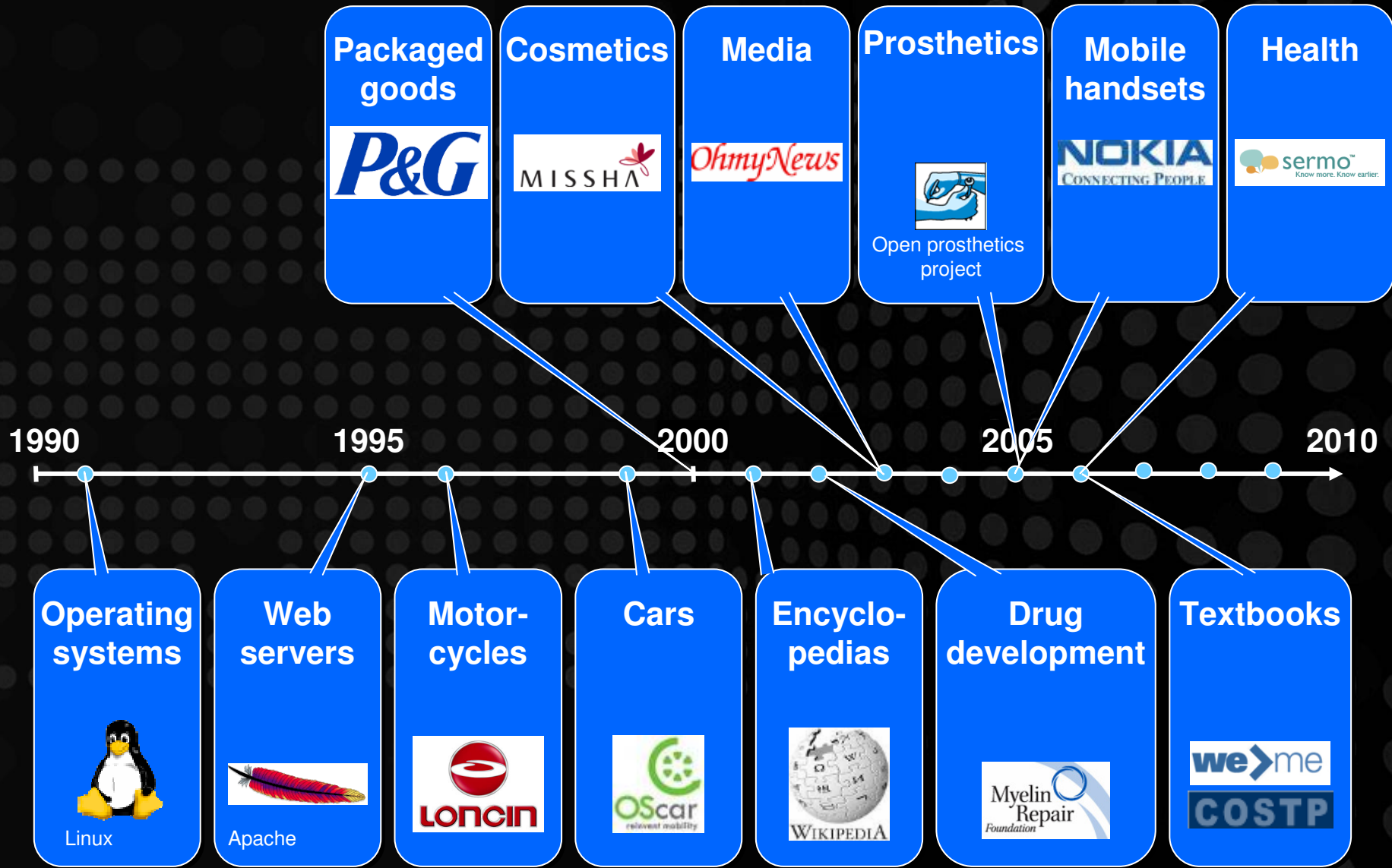
“Collaborative networks of loosely coupled participants (often across institutional and geographic boundaries) generating joint work products using highly decentralized and iterative approaches”

Co-creation has been happening for years...

- The Oxford English Dictionary (OED) is the **most comprehensive dictionary** of the English language
- Contains over 300,000 words **in 20 volumes**
- **Started in 1858, the first edition took 70 years** to publish;
- To gather content, the editors solicited a wide variety of amateur volunteer readers. **In the end, over 800 voluntary readers contributed slips**
- As the size of OED continued to grow, publisher agreed to **pay editors a salary.**



... but momentum has spread to many sectors in recent years



Why is co-creation accelerating now?

Demand: from users

- One billion users on-line
- 3 billion mobile phones (July 2007)
- Participation spreading



Technology: from suppliers

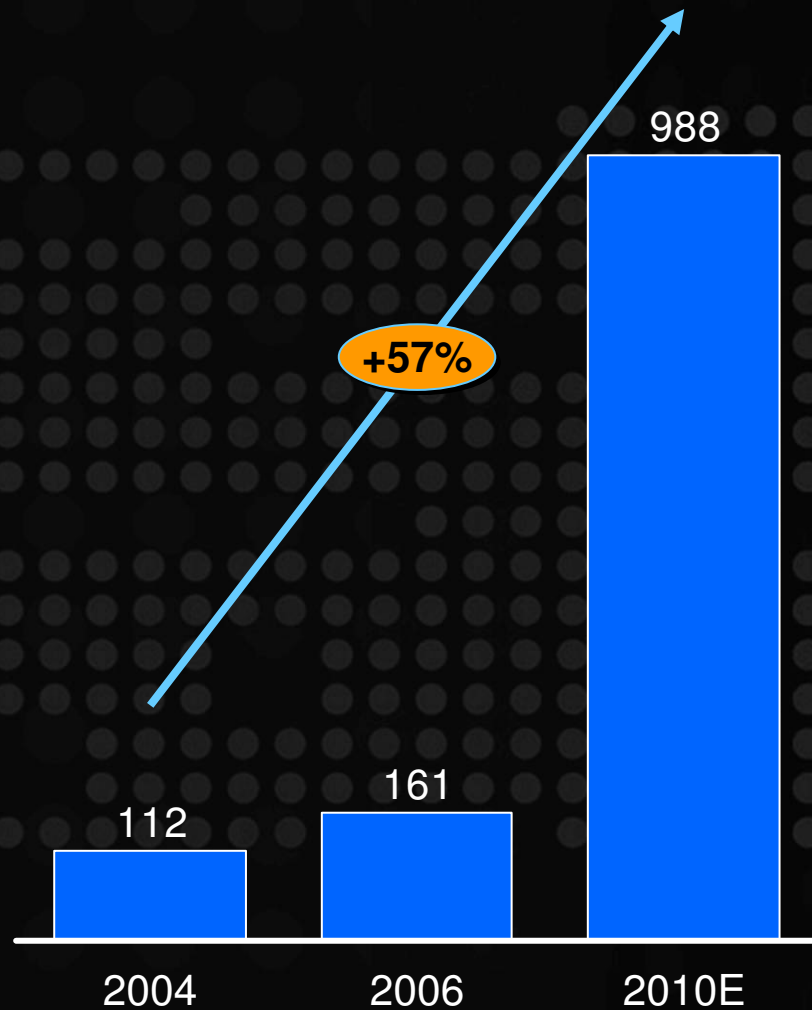
- Moore's Law (*not Grove's Law*)
- User-friendly Web 2.0 technologies



Supply: from providers

- Network effects provide increasing returns to scale

Digital universe is expanding rapidly



- As big as 12 stacks of books extending from the **earth to the sun**
- **Roughly ¼ of digital universe will be newly created**, for ¾ will replicated (E.g., Hollywood movies on DVD, emails forwarded, etc.)-
- 25% of bits created in the workplace, moving to 30% by 2010, -- *but consumers are driving much of the demand*

Web 2.0 technologies facilitate participation...



- 1. Search relevance based on power of web links

Social browser / Social search



- 1. 30% post comments and recommend to friends
- 2. One third of books sold in the long tail, of which 50% comes from recommendations

Social Networking / Tagging



Blogs



- 1. Ability to embed videos outside of YouTube environment
- 2. Ranking based on popularity

Yahoo! Movie reviews



... Participation is moving to the masses

Wikipedia

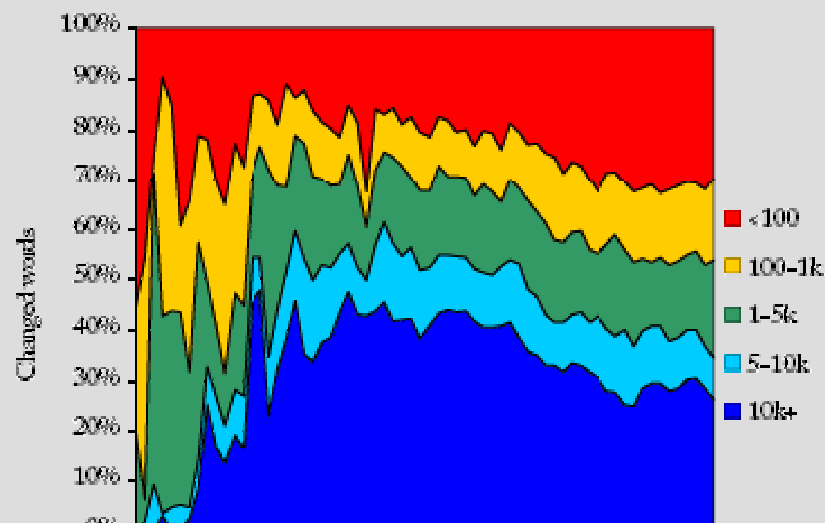


Figure 11. Percentage of changed words in edits made by users with differing editing levels.

Del.icio.us

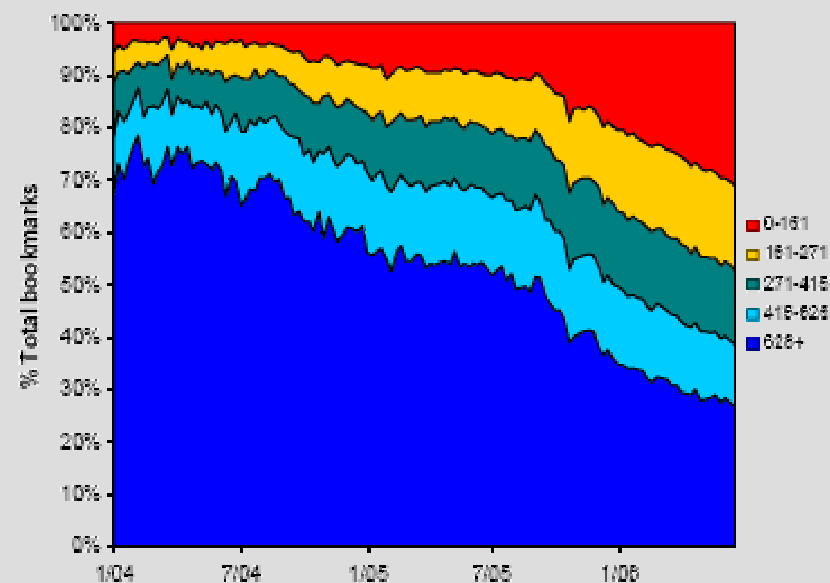


Figure 14. Percentage of bookmarks made by different user classes in del.icio.us.

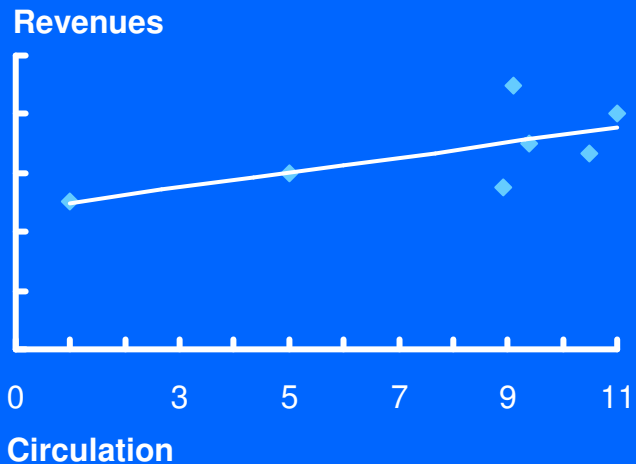
Increasing economies of scale are being discovered

...to user-generated and social media

From traditional medias ...

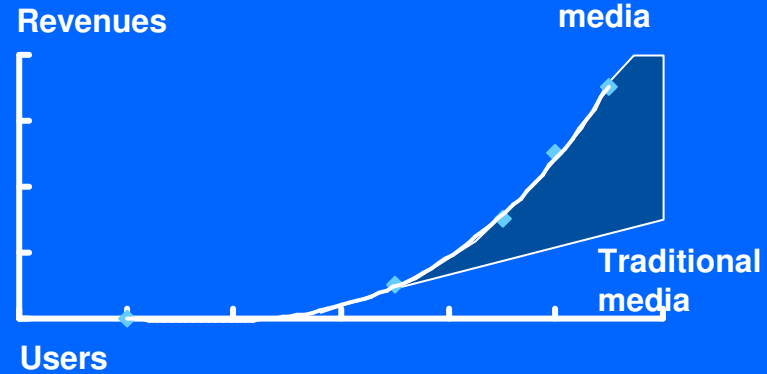
New York Times

- Scale origination: **size**
- Constant returns to scale



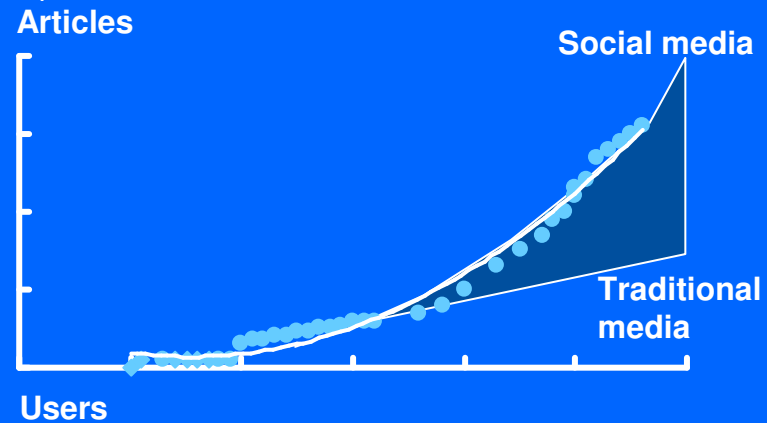
Google

- Scale origination: liquidity and links
- Growing returns to scale



Wikipedia

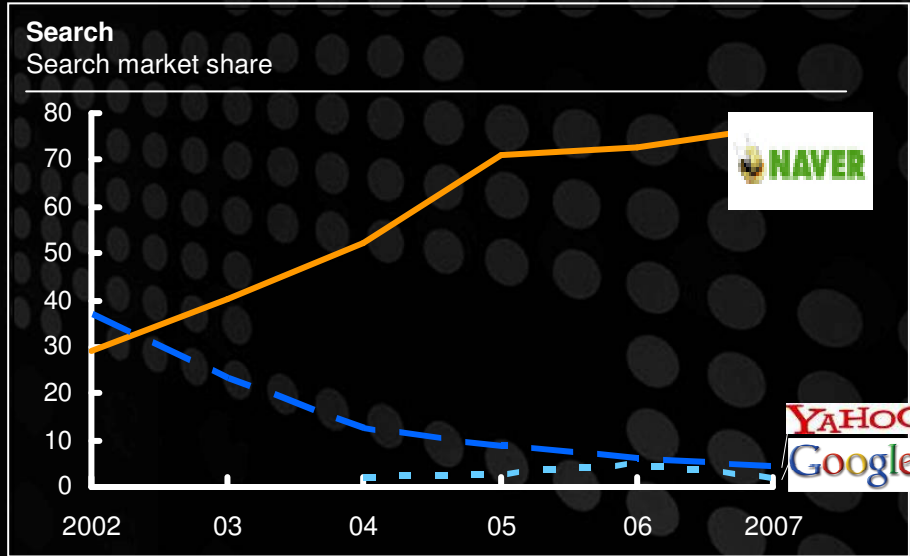
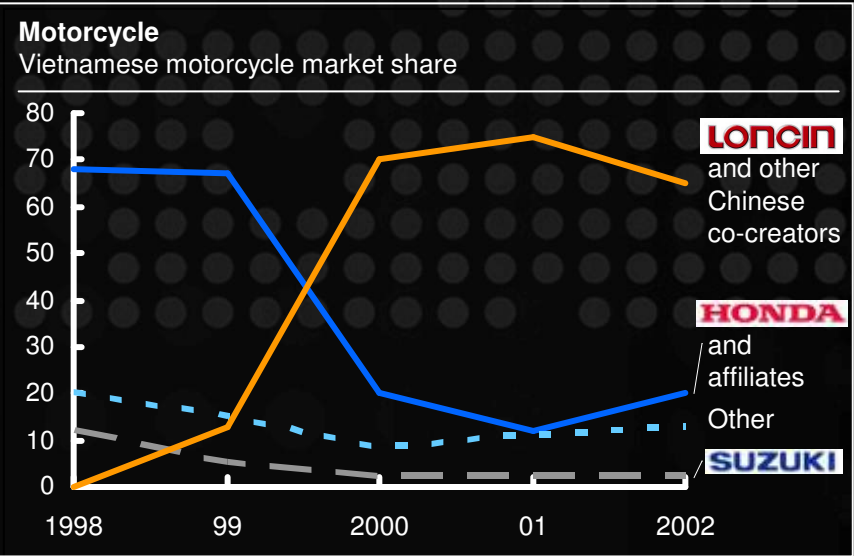
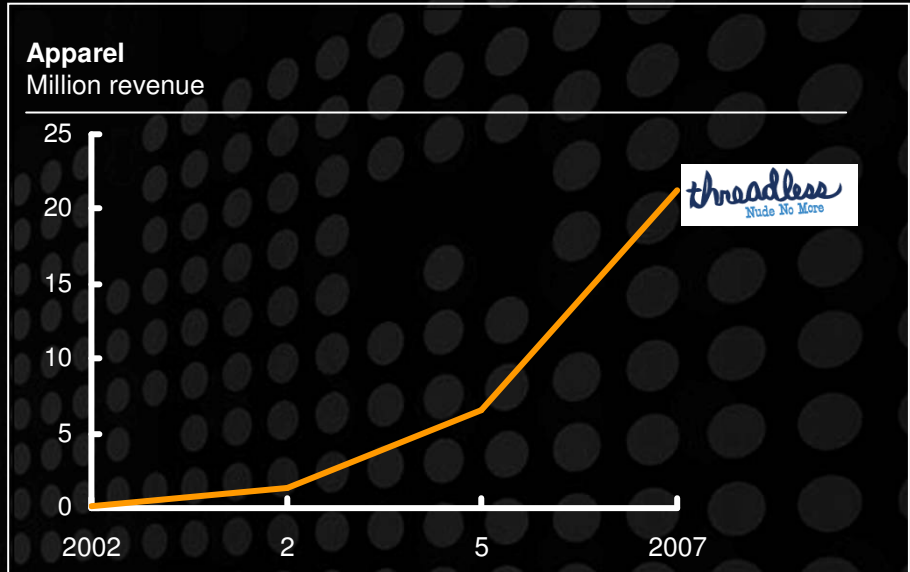
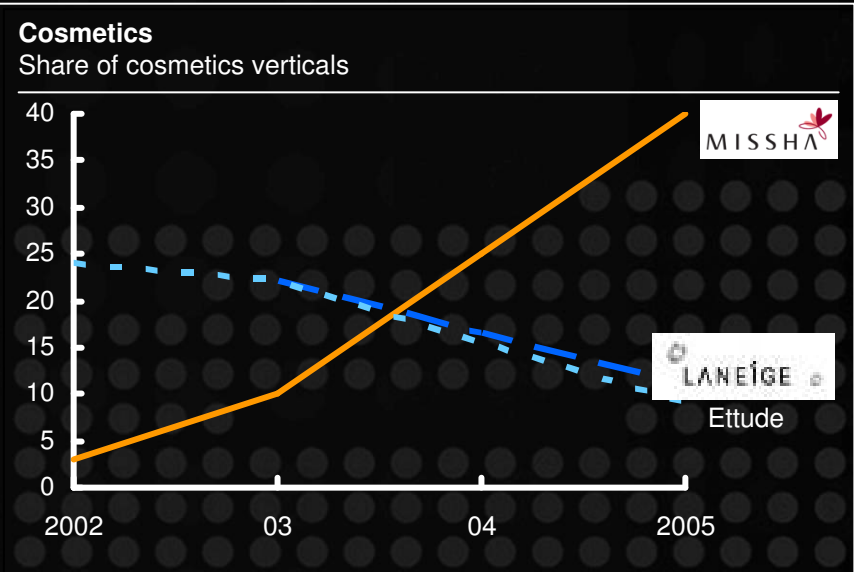
- Scale origination: distributed co-creation
- Exponential returns to scale



Benefits of co-creation

- **Disruptively reshape industry structure**
- **Create cost advantages**
- **Better tailor offerings to customer needs**
- **Accelerate time-to-market**
- **Improve quality**

Distributed co-creation can reshape industry structures



Source: McKinsey Technology Initiative, Credit Suisse First Boston, Adam Fetcher

Create cost advantages with co-creation

- Loncin rapidly iterated on the design of motorcycles to **drive down cost by more than 70%**. This enabled Loncin to capture 60% of the Vietnamese market in under 5 years

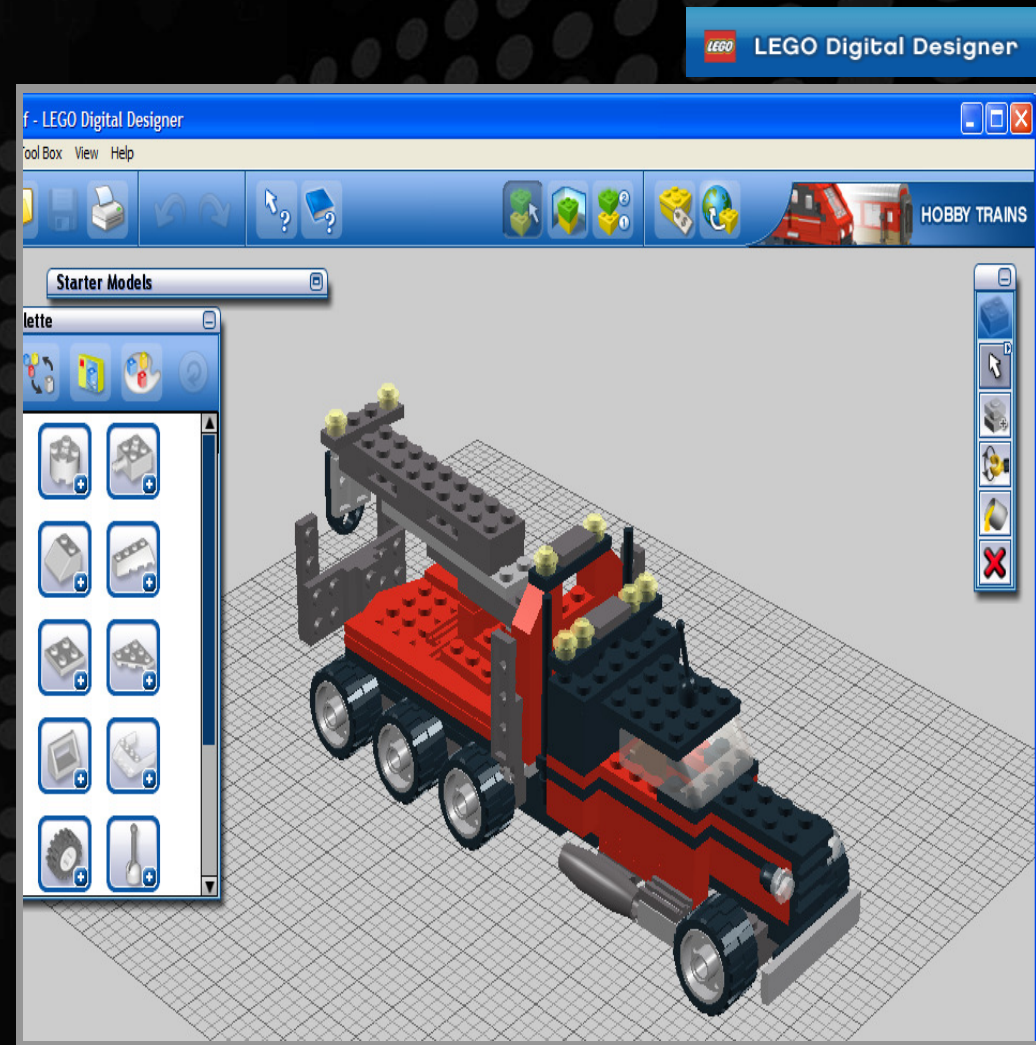


Open Prosthetics Project

- Open Prosthetics aims to make a mechatronic arm for components cost less than 500 USD, a **fraction of the cost** of commercial arms that retail for at least 30,000 USD

LEGO Digital Designer leverages consumers to create, share and iterate on designs

- In 2005, the Lego Design Designer was launched enabling users to design projects with a downloadable, easy-to-use “CAD” software. Designs can be uploaded and iterated on by community
- Users can purchase designs which are shipped to them including instructions on how to assemble
- More than 77,000 models have been designed by users since launch
- Lego expects 10% decrease in design labor costs or 10% increase in revenue through retail distribution of select Lego Design Factory models



Netflix offers \$1 million prize in a contest to improve the prediction accuracy of its recommendation algorithm

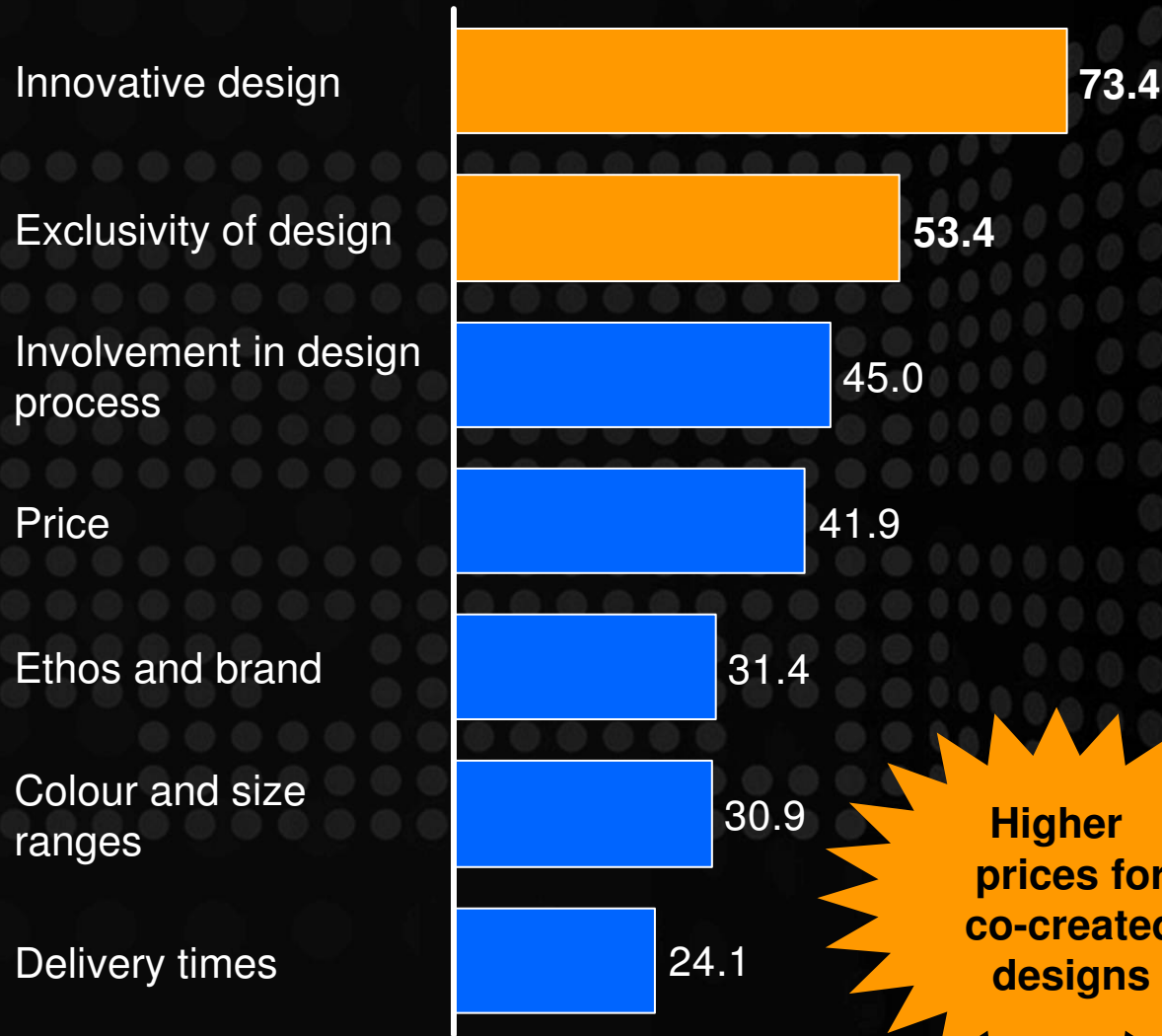


The image shows a person's silhouette interacting with a large screen displaying the Netflix website interface. The screen shows 'Movies For You' recommendations, a 'You really liked it...' section, and a 'Gives' section. A large green code block is overlaid on the left side of the screen.

- Netflix is a mail-order DVD rental company that uses a complex algorithm to recommend DVDs to its customers
- Netflix offers \$1M prize to any individual that can improve the algorithm to increase prediction accuracy by 10%

Tailor products to customer needs by co-creating

Top 3 reasons to buy from Threadless



Higher prices for co-created designs



Source: Adam Fetcher, "Do consumers want to design unique product on the internet," paper presented at the MCPC 2007, McKinsey Analysis

Co-creation can reduce uncertainty about customer demand



- **80/20 Publishing** is developing tailored magazines (e.g., “JPG”) with user-generated and edited content
- **Sell through rate is 70% on newstand** vs. 50% for industry



- Missha developed a **strong pipeline of orders and of satisfied customers** before asking them for best delivery location and before **opening key retail stores (up to NY)**



- SugarCRM leads the development of an open source CRM package
- Customers in different verticals customize package for their needs

Accelerate time-to-market using co-creation



- In less than 2 years, **Wikipedia** reached the same number of articles as Encyclopedia Britannica, and now has **12 times the number of articles** by deploying hundreds of thousands of contributors
- Myelin Repair Foundation expects to license at least one drug within 5 years, **15 years shorter** than an average medical research timeline



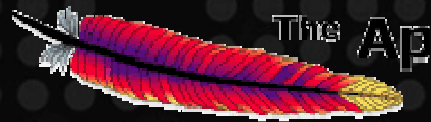
Distributed co-creation can lead to higher quality

“Given enough eyeballs, all bugs are shallow.”

- *Eric S. Raymond*



8 of the 10 most reliable Internet hosting companies run Linux



Apache

37 of 50 **longest uptime** web servers run Apache

Aspects of implementing co-creation

- 1. Signal credibility to potential contributors**
- 2. Establish clear model of leadership**
- 3. Create the right incentives to participate**
- 4. Find the population of participants**
- 5. Experiment and scale**

1. Signal credibility to potential contributors

Reputation of individual orchestrators

- Individuals add their own reputations to the credibility of the project



- Collabnet: Brian Behlendorf's reputation as a leader in open source software development bolstered the credibility of the Collabnet project at the outset

Corporate brand strength

Corporation sponsors, orchestrates or contributes, throwing the weight of their brand behind the project



- IBM Eclipse: IBM's corporate brand strength attracted contributors to a project that had immediate credibility due to its sponsorship by a top technology firm

Third-party funding

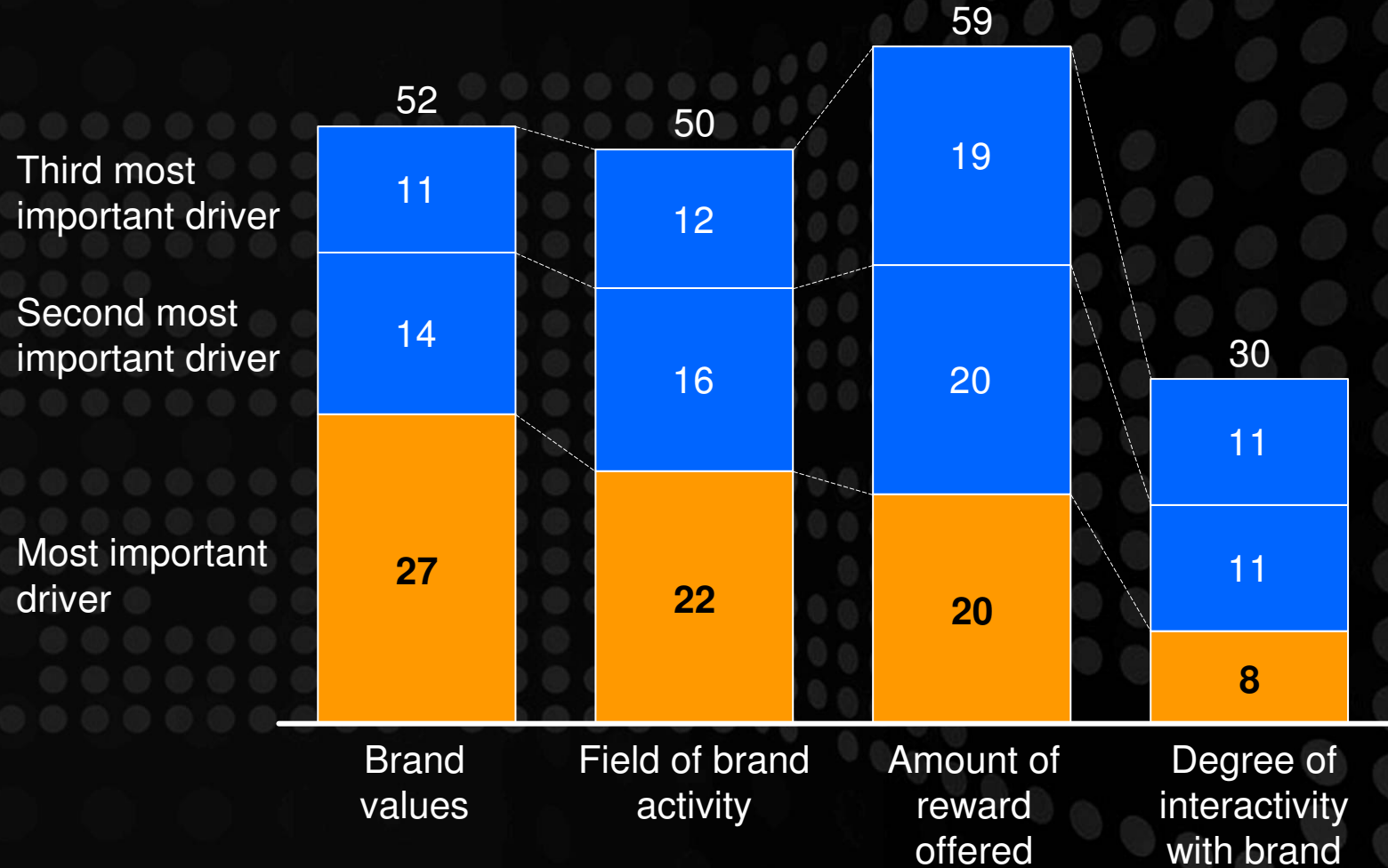
Third parties endorse project by contributing financial or other resources



- Myelin Repair Foundation: Myelin has gained credibility without a functional product by generating significant public financial support for their work

1. For consumers co-creation, brand is very important

Drivers of co-creation participation, Percent, Second Life



2. Establish clear model of leadership in co-creation networks – balance top-down and bottom-up control

Open election

- Community-approved volunteers
- Direction of project is clearly established
- Few incentives for individuals to undermine governance



- Wikipedia: anyone can nominate for leadership position with editorial power; nominations subject to community approval

Representative election

- Elected governance boards
- Turnover in leadership perceived as valuable
- Direction of project should be determined by contributors



OpenSolaris: From 40% of initial board membership, moving to fully elected governance board

Appointments

- Appointed governance boards
- Retaining full direction over project is critical
- Oversight independent of contributors can mimic peer review process



Myelin Repair Foundation: Scientific Advisory Board appointed by founders

Founder

- Self-declared leader
- Founder either wants to retain control of project Or perceived as wise leader among contributors



Linux: Linus Torvalds the only known leader of development efforts

2. With co-creation, there are real risks...



Negative consumer participation

- Chevy ad campaign motivated consumers to create own ads
- 20% of ads showed Chevy as a fuel-guzzling car or linked it to the war in Iraq

Impact

- > 500,000 views on YouTube
- Media coverage in New York Times, Nightline and others

3. Create the right incentives to participate – often non-monetary

Sharing rewards

- Salary, weighted to contribution value, or “winner takes all” for best contribution
- Stock options
- Revenue sharing



- Loncin: Only best components are purchased for final production



- IBM: pay developers to contribute to Linux base



- Red Hat: gave stock options to top contributors



- Tianping: discount to insurance policies

Enhancing skills development

- Create opportunities for knowledge development and apprenticeship



- Open source software: developers learn new coding techniques

Building reputation

- Track and rank participant's contributions over time
- Publicly acknowledge prolific or valuable contributions



- Linux/Apache: developers build a reputation based on code they contribute

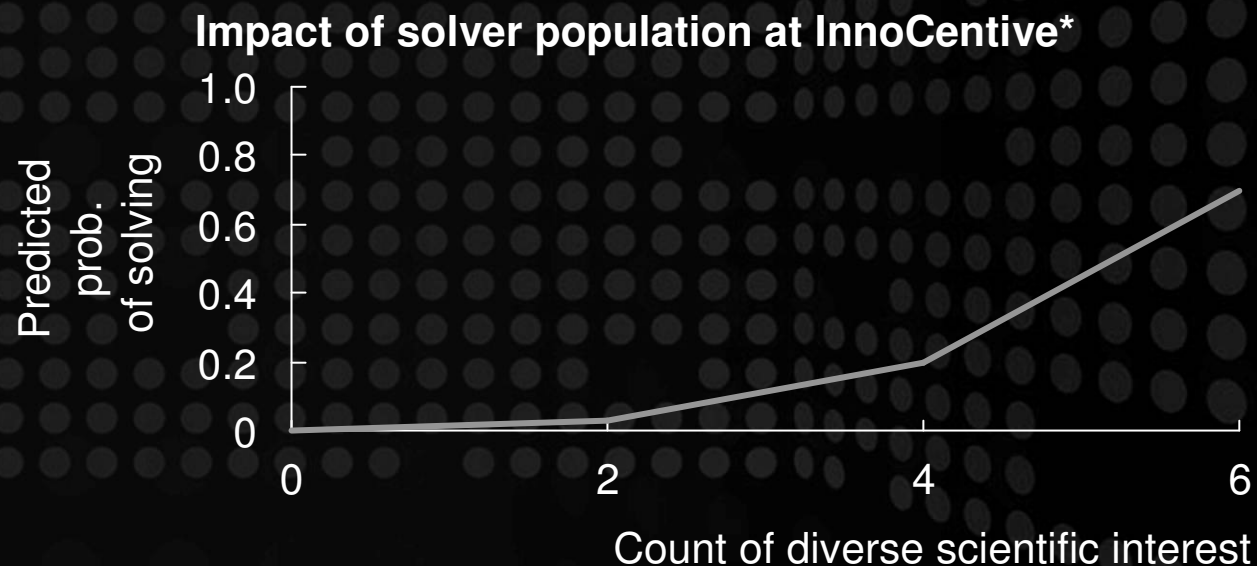


- OhMynews.com-top journalists are paid by tips and recognized a new creatives

4. Find population of participants


A population of experts from diverse fields yield the highest probability of success

Increasing expertise diversity in a population improves the likelihood a given problem will be solved...



* Results of 166 discrete scientific problems posted on InnoCentive's website; solvers drawn from a community of 80,000 scientists
Source: Innocentive; Lakhani, Karim "The Value of Openness in Scientific Problem Solving", Surowiecki, James "The Wisdom of Crowds"; interviews; team analysis

5. Experiment and scale – requires new mindsets

- Directed innovation and investment
 - Assigning experts
 - Standardization
 - Assigned roles and tasks
 - Monetary incentives
 - Central monitoring
- 
- Grassroots initiation and implementation
 - Selecting the right audience
 - Enabling end-user flexibility
 - Self-selected contributors
 - Reputation incentives
 - Self-policing

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The beginning...