



INSTITUT FÜR
STRATEGIE, TECHNOLOGIE
UND ORGANISATION



WIRTSCHAFTS
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WIEN VIENNA
UNIVERSITY OF
ECONOMICS
AND BUSINESS



Crowdsourcing

Univ.-Prof. Dr. Christopher Lettl

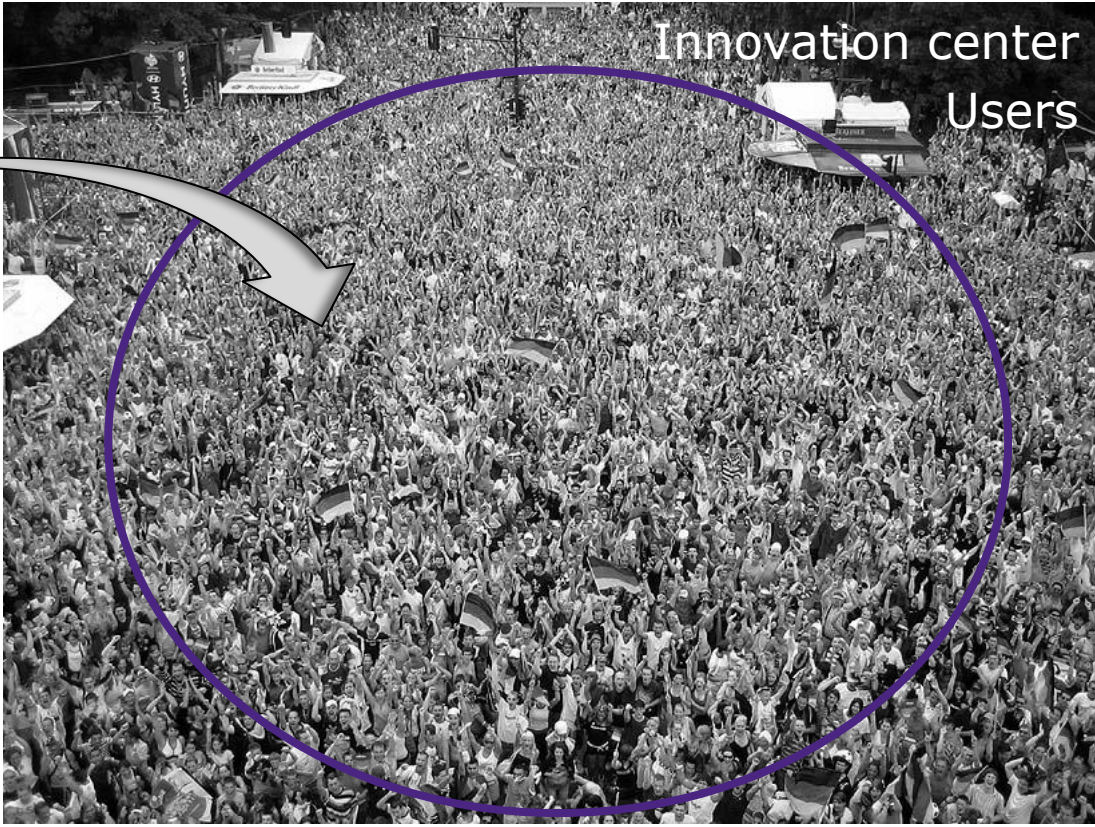
Open Data Workshop, 12.06.2015

What's going on?

We are in the midst of a paradigm change. The manufacturer-active perspective is displaced by a user-active perspective.



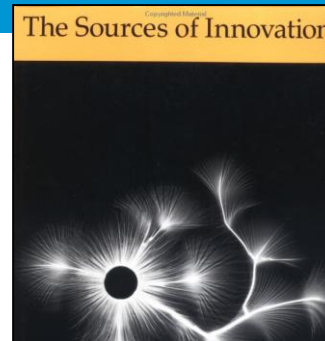
Innovation center
R&D Lab



Innovation center
Users

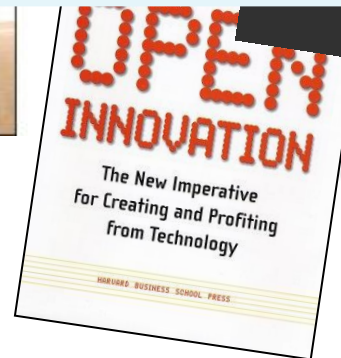
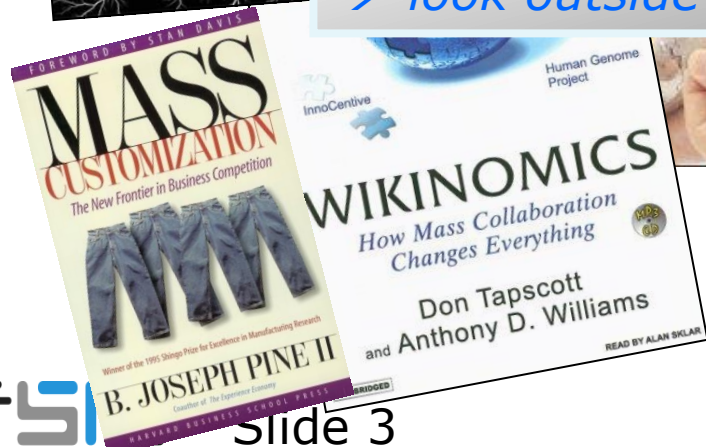
The new paradigm has many names

User innovation, Web 2.0, Wikinomics,
Crowdsourcing ...



Common message

- there is much creativity and innovativeness outside firms' boundaries
- look outside the company!



Article in New YORK TIMES

New York Times

If You Have a Problem, Ask Everyone

By [CORNELIA DEAN](#)

Published: July 22, 2008



Bill Joy, Co-Founder, Sun Microsystems

"Most of the bright people do not work for you – no matter who you are. [So] you need a strategy for innovation to occur elsewhere."

The consumer innovator force of



„90% of our customers just want to consume.

Perhaps 10% want to make their own stuff.

1% has the skills to make something
which is good enough for others to want to buy it.

Perhaps 1% is high, let us say 0.1 or even 0.01%,
but with a customer base of 3.2 million
that is still more than **3.000 people!**

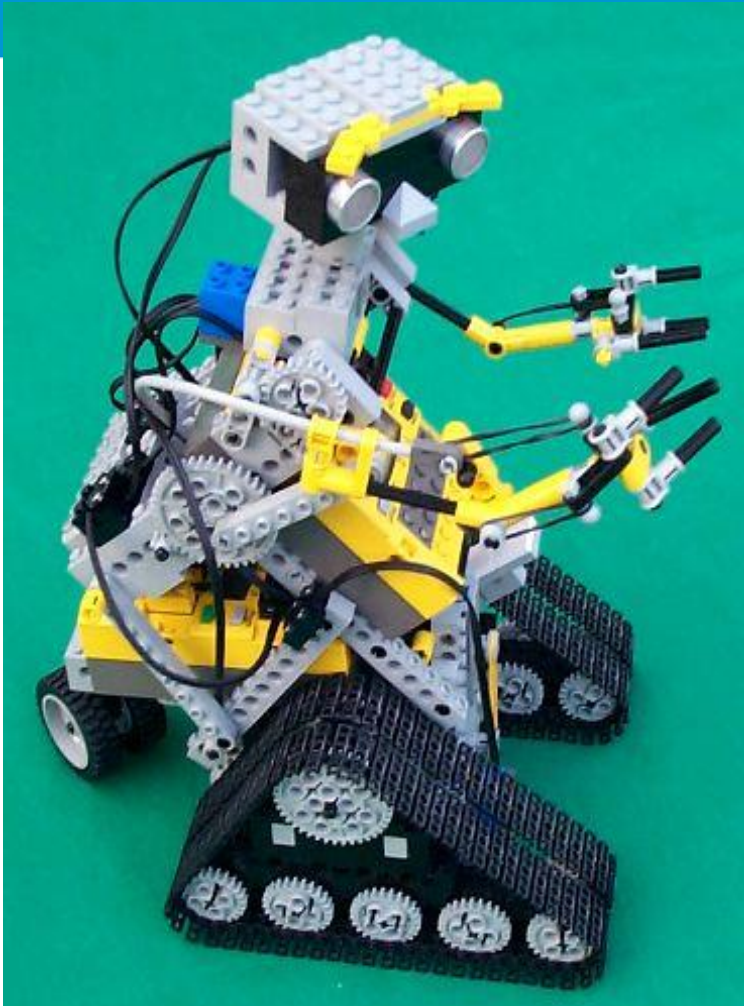
At the moment we have **150 designers** at LEGO“

Paal Smith-Meyers, LEGO

Four types to leverage external creativity

Innovation Mall	Innovation Community	PARTICIPATION	Open
Elite Circle	Consortium		Closed
GOVERNANCE			
Hierachical	Flat		

The Mindstorms Experience



Mindstorms robot kit

The brain

- Computer “brain” within Lego brick

Movement

- 3 stepper motors

Sensors

- Light
- Touch
- Temperature

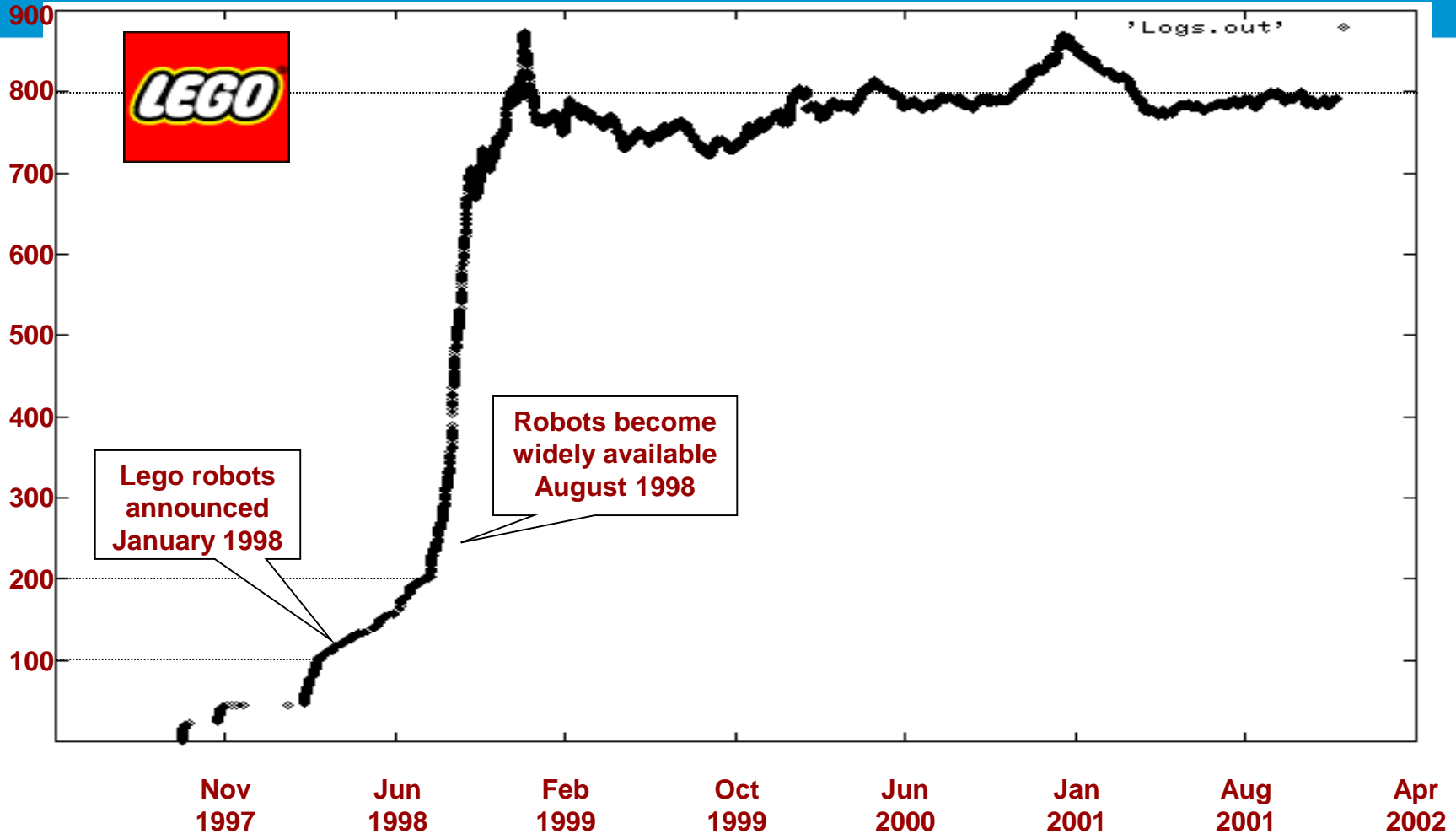
Teaching

- Kid-friendly, graphical programming environment
- Programs downloaded from PC via infrared

Price ~ \$200

LEGO Mindstorms user community grew rapidly - without company involvement -

Members



Within 3 weeks of commercial introduction users had improved it significantly

The rules

Robots follow 7 meter “track” of tape

- Light sensors detect tape
- Internal software tells robot how to move

Fastest time around track wins

About one dozen participants



The results

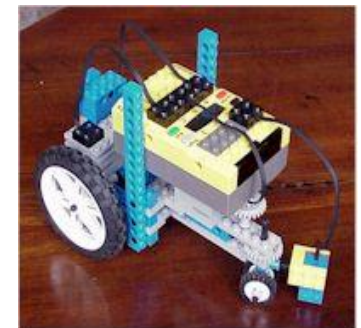
Winner (below left)

- Used hacker-developed LegOS software
- Time under 10 seconds (73 cm/s)

Second place (below right)

- Used program based on LEGO firmware
- Time of 25 seconds (28 cm/s)

Ability to rapidly sample sensors was the key



LEGO was not sure how to respond - for several years -

“There was almost a full year without a word from Lego: Neither acknowledgement of what was going on nor threats towards the hackers.”

David Baum, Lego hacker

“Lego executives simply didn’t know what to do ...”

Internal Lego executive

(Source: BCG interviews)

Today, LEGO is creating many links

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Top innovators from
“Adult Fans of Lego”
participate in LEGO factory
product development teams



For NXT Mindstorms Robot product line:

- Lego adopts key existing AFOL innovations
- Lego asks a few AFOL members to join R&D team

“LEGO Ideas”
Website links fans who want
to share their designs



The screenshot shows the LEGO Factory website interface. At the top, there is a navigation bar with icons for HOME, PRODUCTS, CLUB, SHOP, and LEGOLAND, along with a search bar and a 'club SIGN IN' button. Below this is a secondary navigation bar with 'FACTORY' branding and buttons for HOME, DESIGN, GALLERY, PRODUCTS, and HELP. The main content area is divided into three columns: 'CREATE' (with a sub-header 'CREATE YOUR 3D MODEL IN LEGO DIGITAL DESIGNER'), 'SHARE' (with a sub-header 'SHARE YOUR MODEL WITH OTHER LEGO FANS IN THE ONLINE GALLERY'), and 'BUY' (with a sub-header 'BUY THE BRICKS NEEDED FOR YOU TO BUILD YOUR MODEL'). Each column contains a 3D model of a red and yellow robot. Below the main content, there are three news items: 'New versions of LEGO Digital Designer enables you to build your way customizing your own product, or share your models with other LEGO fans in the online gallery', 'Read about the LEGO fans whose designs became real LEGO Products! See the Design Winners', and 'New LEGO sets designed by LEGO fans See the Products'. A final news item at the bottom right says 'NEW LEGO DIGITAL DESIGNER NOW FOR BOTH PC AND MAC Download the new version of LEGO Digital Designer Click here to Download'.

SpineConnect

Innovative collaborative communities also exist in high-tech markets.

- International community of leading spine surgeons
- Exchange and collaborate on difficult and unusual cases – and new treatments
- Growing case knowledgebase of over **1,600 cases** and **6,000 reviews**.



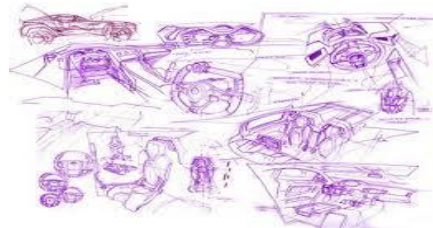
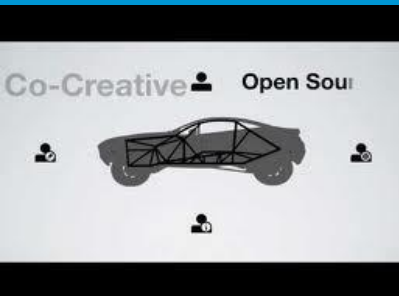
The SpineConnect Solution

Connect with Peer Spine Surgeons.
Streamline Case Consultation.
Connect to Business Processes.

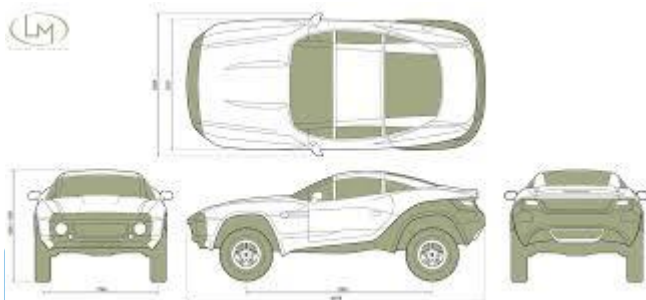
LEARN MORE ►

Crowdsourcing@Automotive: The Case of Local Motors

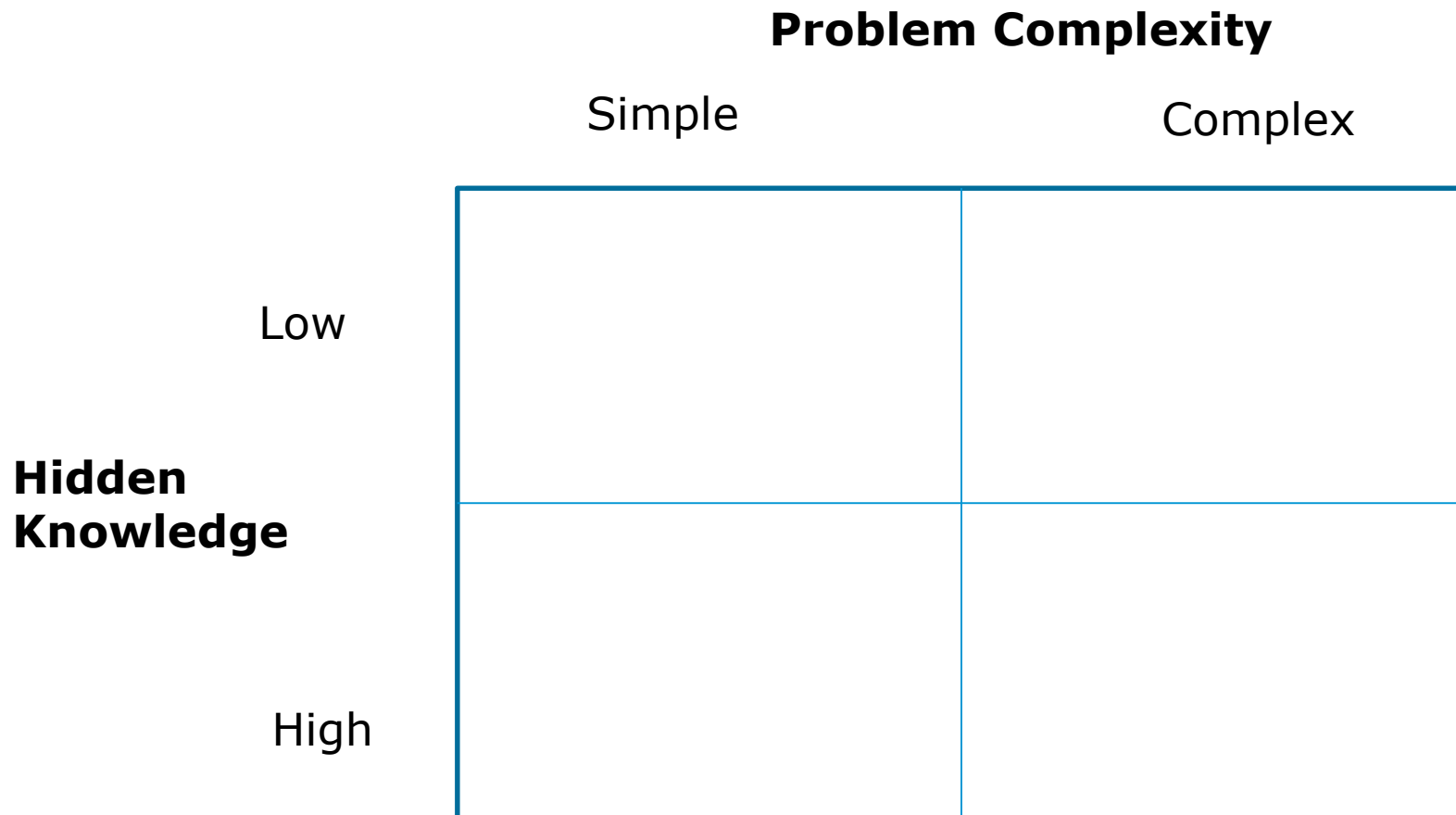
*International community of enthusiasts, designers,
engineers, fabricators and experts.*



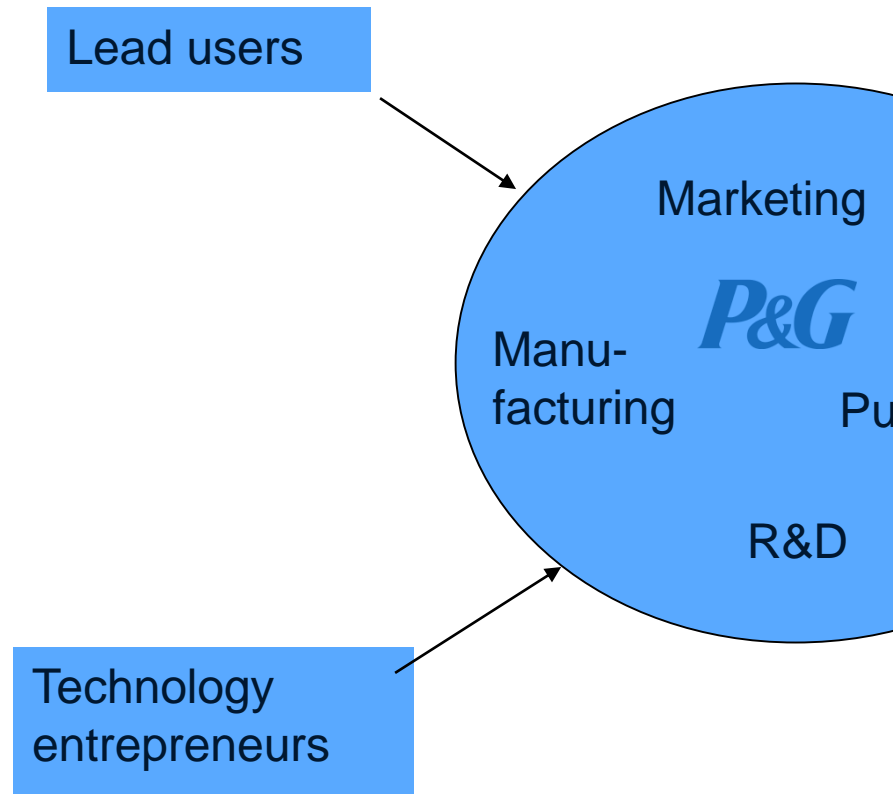
- **62 employees**
- **over 38.2k community members**
- **collaborating on 5.1k designs and**
- **1.6k ideas**
- **across 500 projects.**
- **Crowdsourcing and Open Source**



The contingency space of governance choice



P&G's radical new model for innovation: „Connect and Develop“



Outcomes

Today more than 35% of new products come from outside.

45% of initiatives in NPD portfolio from outside.

R&D productivity increased by 60%.

Innovation success rate has doubled while costs for innovation have fallen.

R&D investments as % of sales down from 4,8% in 2000 to 3,4% today.

Share price doubled and portfolio of 22 billion dollar brands.