

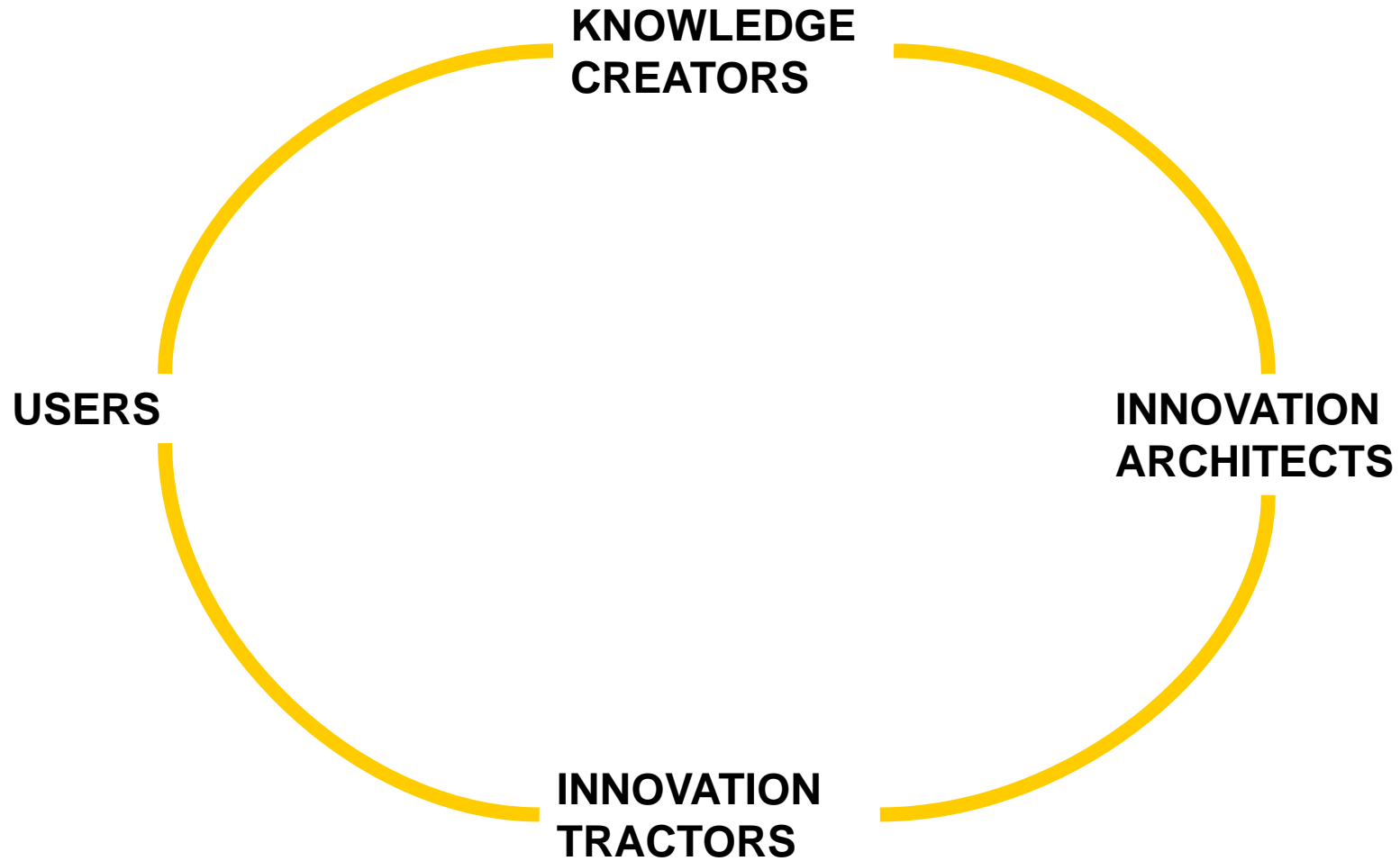


OPEN INNOVATION SPEAKER SERIES SPRING 2009
Haas School of Business, UC Berkeley

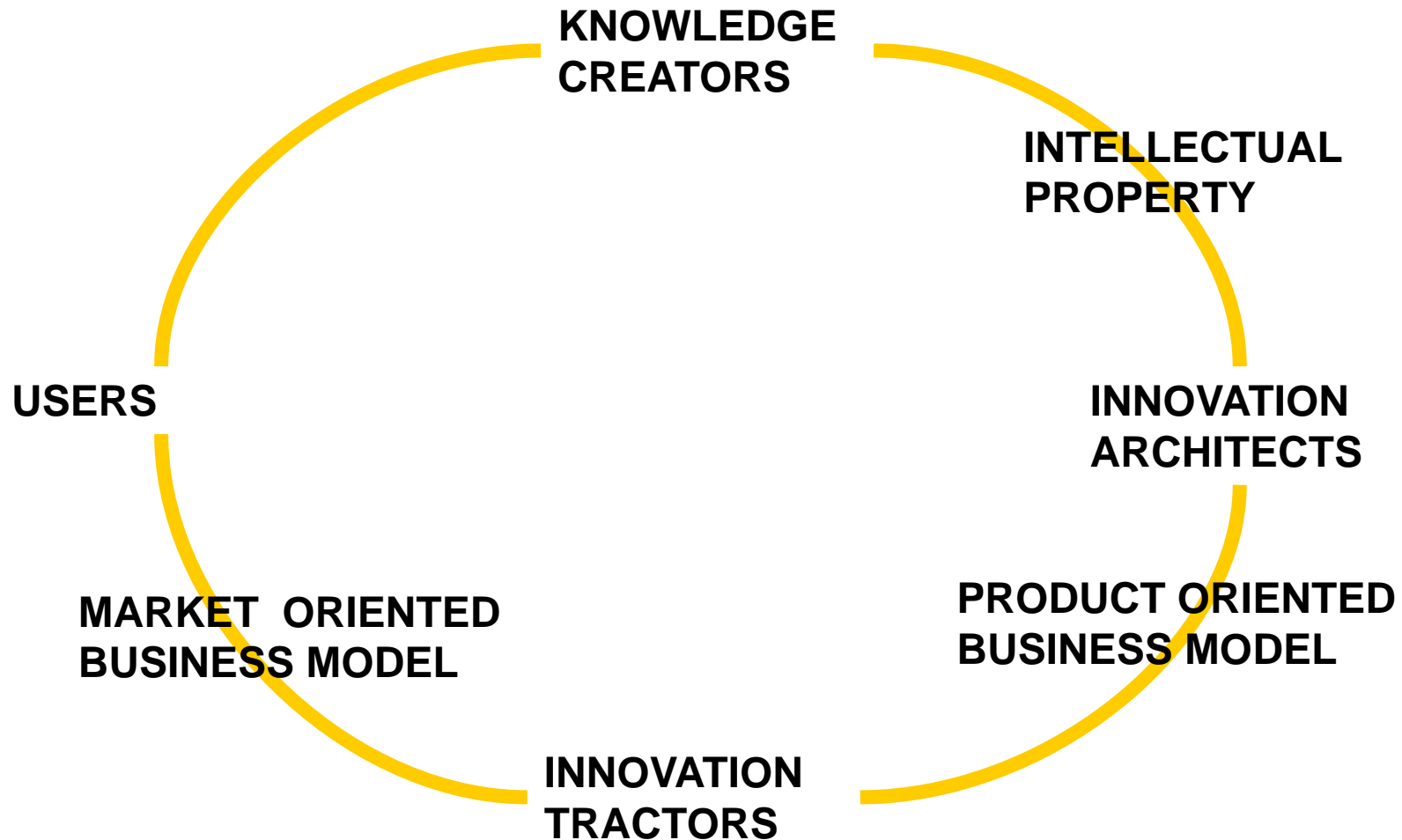
Prof. Francesco D. Sandulli
UCM-Orange Chair on Information Society
Universidad Complutense de Madrid

April 20 2009

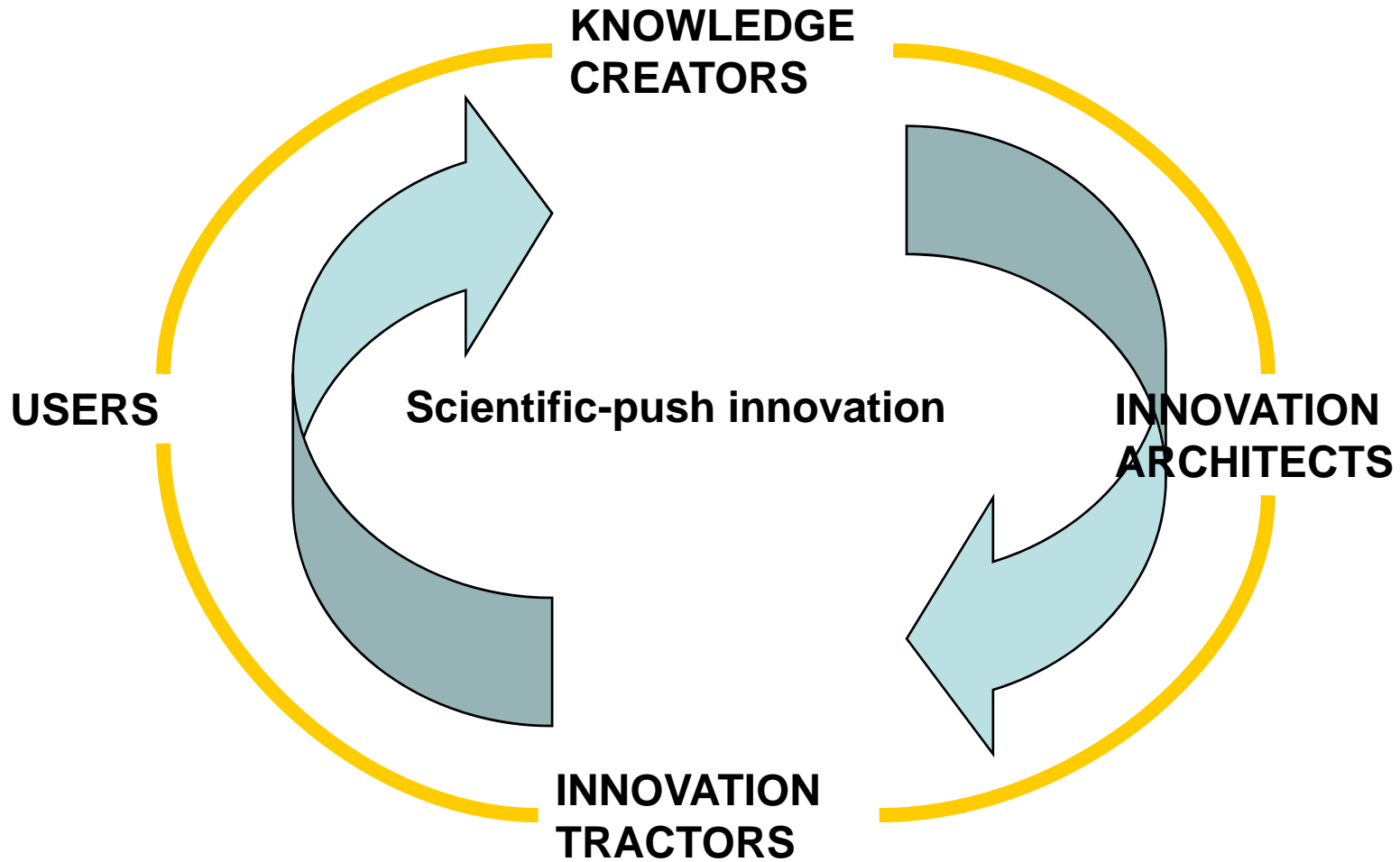
THE INNOVATION CHAIN



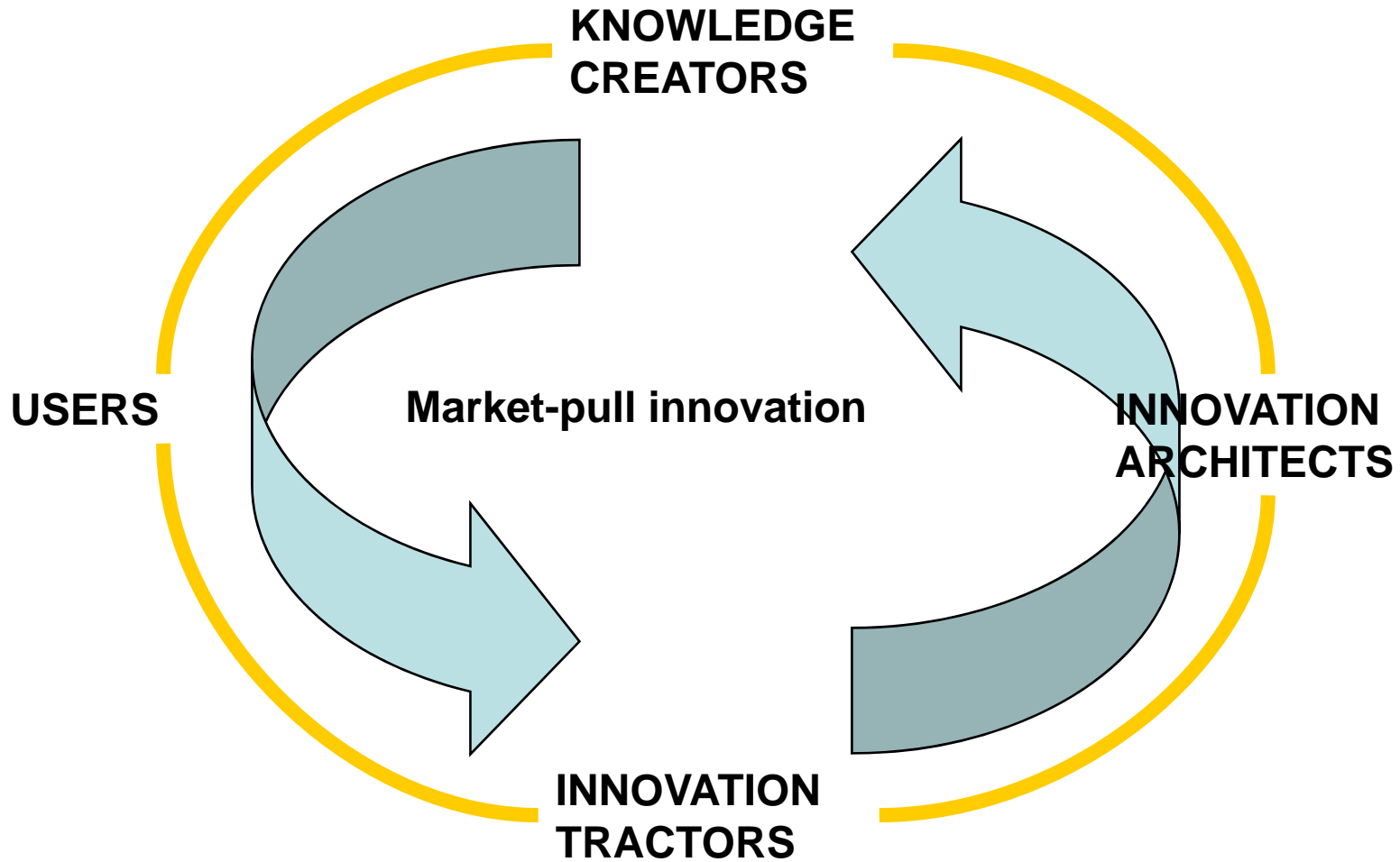
THE INNOVATION CHAIN



THE INNOVATION CHAIN



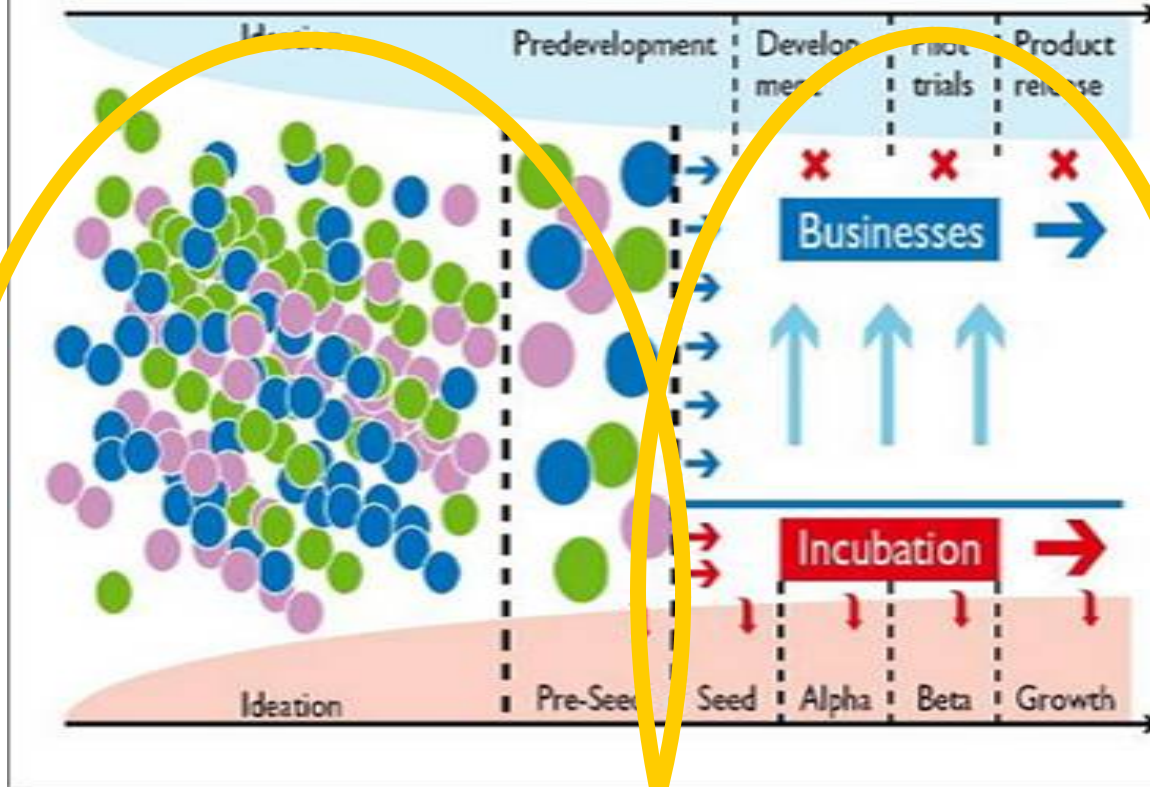
THE INNOVATION CHAIN



THE INTERNAL INNOVATION CHAIN

Dual Innovation track

PHILIPS



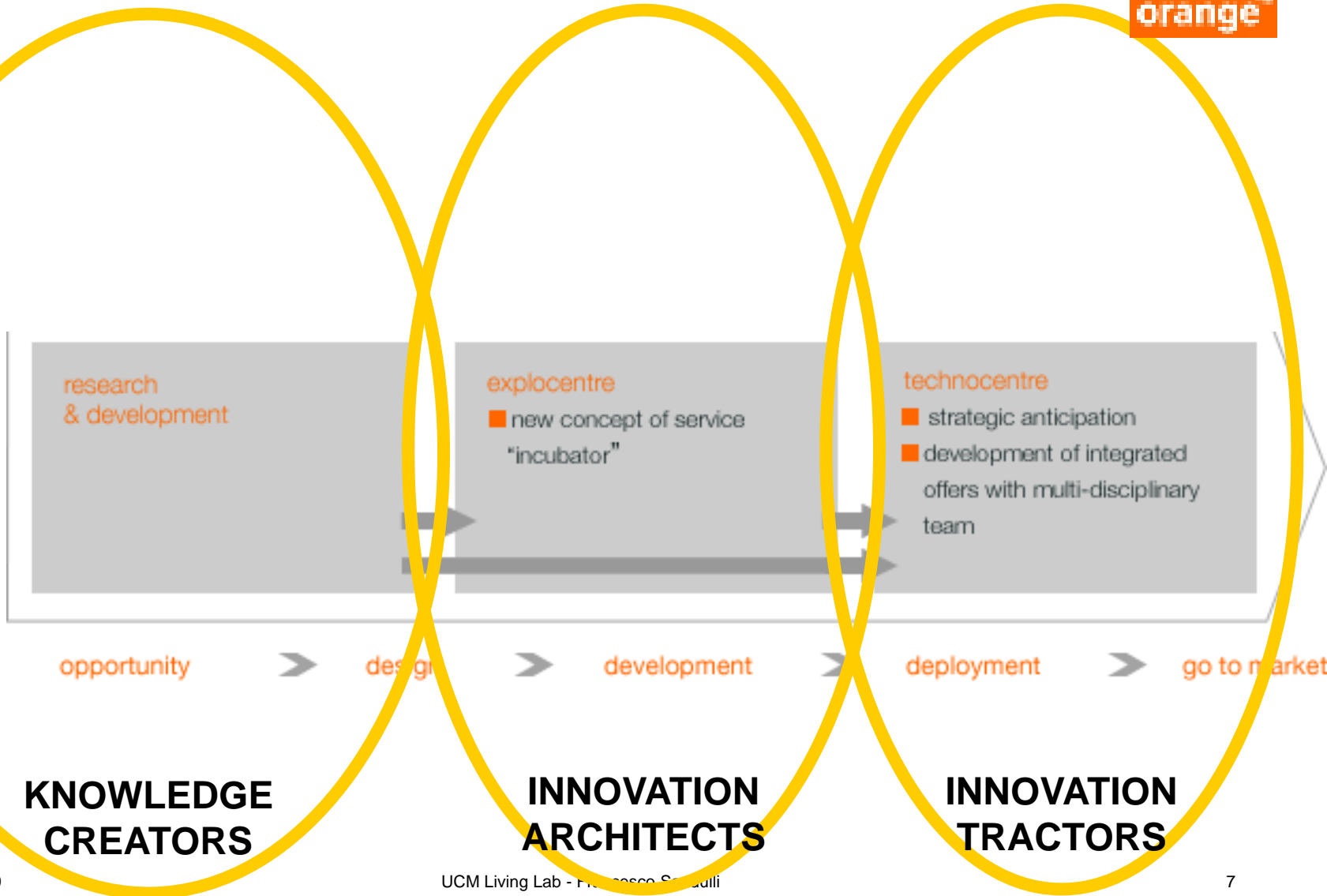
CONSUMER LIFESTYLE
HEALTHCARE
LIGHTING

**KNOWLEDGE
CREATORS**

**INNOVATION
ARCHITECTS**

**INNOVATION
TRACTORS**

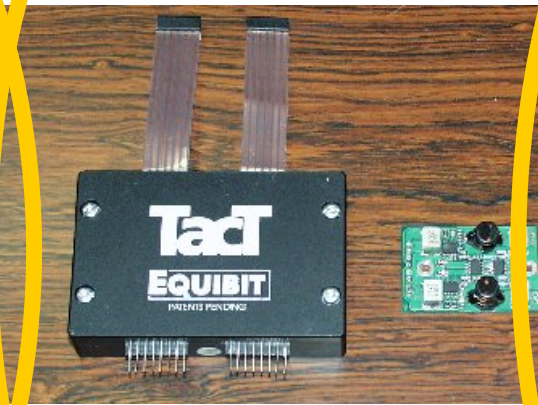
THE INTERNAL INNOVATION CHAIN



THE EXTERNAL INNOVATION CHAIN



**KNOWLEDGE
CREATORS**



**INNOVATION
ARCHITECTS**



**INNOVATION
TRACTORS**

THE INNOVATION CIRCLE: EXTERNAL FOCUS



**KNOWLEDGE
CREATORS**

imet
INTELLIGENT
METHODOLOGIES

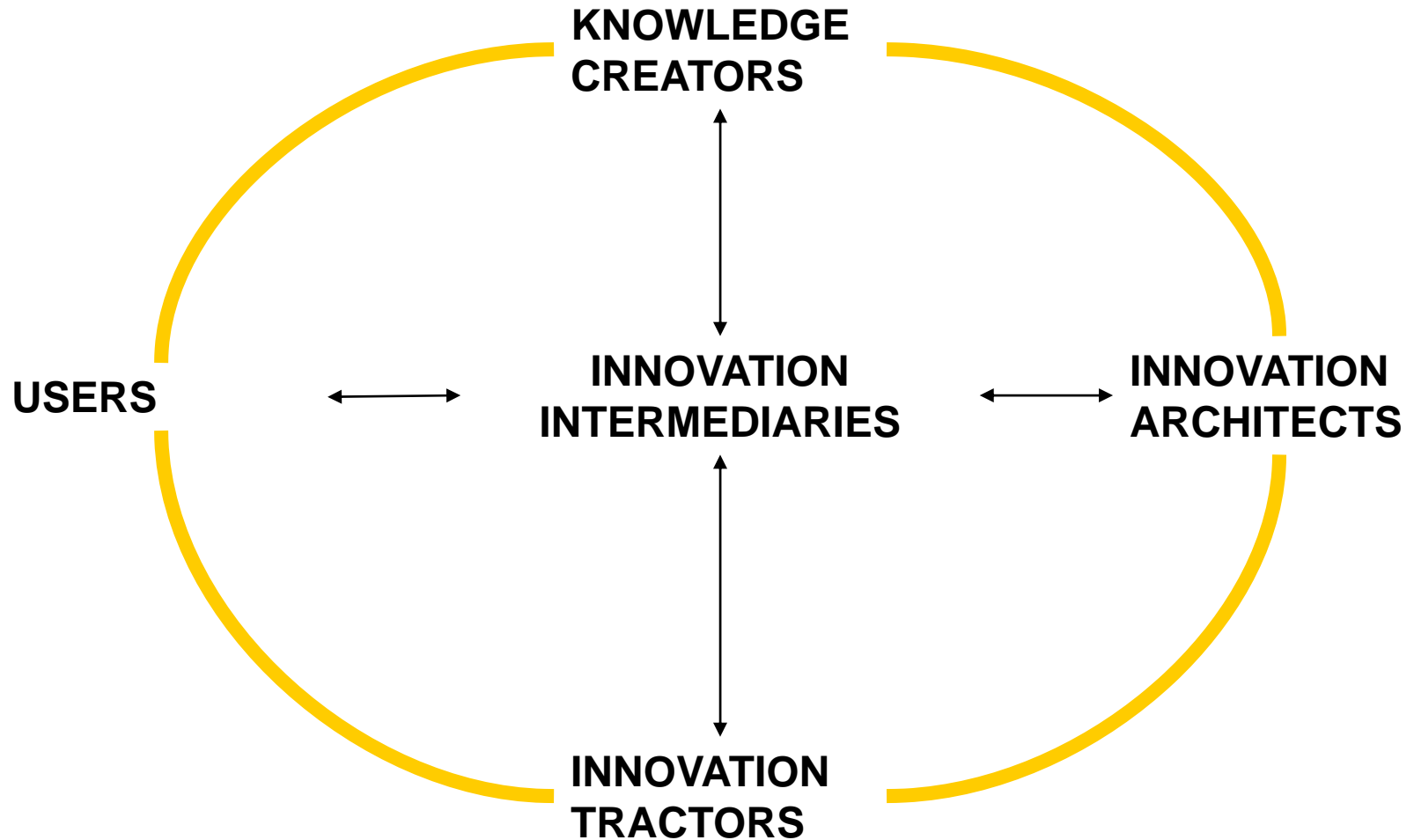


**INNOVATION
ARCHITECTS**

Arrixaca
Hospital Universitario "Virgen de la Arrixaca"

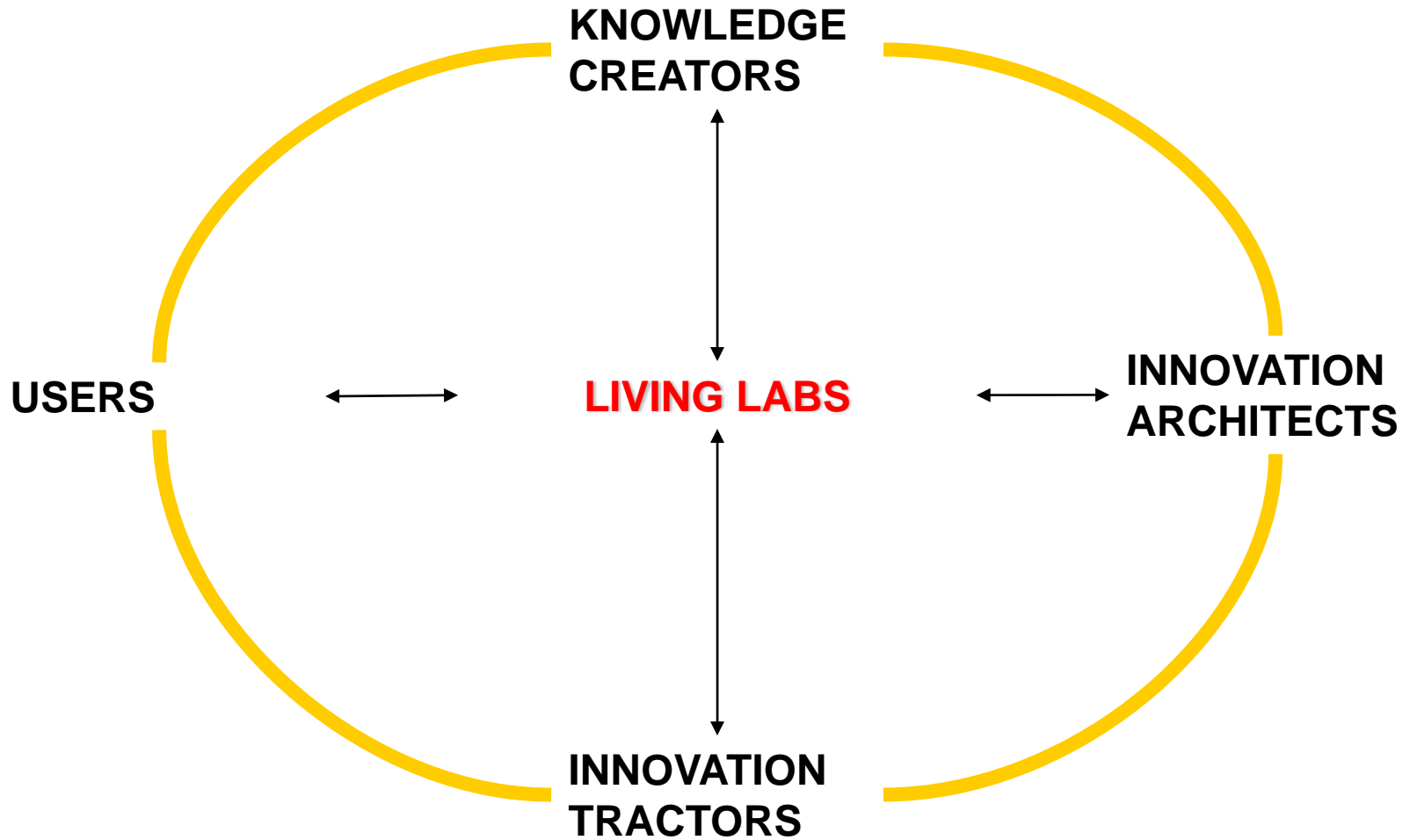
**INNOVATION
TRACTORS**

THE INNOVATION CIRCLE



- The roles of innovation intermediaries (Howells, 2006):
 - Foresight and Diagnostics
 - Scanning and Information Processing
 - Knowledge Processing, Generation and Combination
 - Gatekeeping and Brokering
 - Testing, Validation and Training
 - Accreditation and Standards
 - Regulation and Arbitration
 - Intellectual Property Advice and Management
 - Commercialisation
 - Assessment and Evaluation

THE INNOVATION CIRCLE



- The roles of Living Labs (Folstad,2008):
 - Context Research: describe the context of use
 - Technology driven projects may create myopia
 - Discovery: Provide insight into unexpected uses and opportunities
 - Sensing and Methodologies
 - Cocreation
 - Users need tools to cocreate.
 - Evaluation
 - Evaluate Product Design vs Performance
 - Technical Testing
 - More easily found in mature ideas and designs

- Living Labs so far...
 - User involvement (mainly in testing tasks) and cocreation
 - Push technology driven
 - Technological Neutrality
 - Ad hoc, not longitudinal
 - Contextual research, early phase of innovation and less mature technologies
 - In Europe...Lots of public funds and high fragmentation (difficulties in paneuropean or even national experiments)

OUR PROJECT



- UCM Figures:
 - 86,892 Students
 - 6,868 Lecturers
 - 4,012 Administrative Staff
 - 78 Undergraduate programs
 - 235 Graduate programs
 - 32 Libraries



UNIVERSIDAD COMPLUTENSE
MADRID

- Partners:
 - Big Players (Innovation Tractors, creating demand for innovation and allowing medium run sustainability: incentives for university spin offs)
 - Retail Industry
 - Store Technologies Testbed
 - Telecom Industry
 - Integration of telephone and Internet channels
 - Retail Banking Industry
 - Payment and eBanking services in mobility
 - “Not so open”: Exclusive Relationship. Problems related to appropriability which can be assumed to limit the willingness of Service organisations to share knowledge

WE WANT TO BE DIFFERENT...

INNOVATION
TRACTORS

MULTIPLE
INDUSTRIAL
PARTNERS

SERVICES
ORIENTED



NOT SO
OPEN

PRIVATE
FUNDING

PULL MARKET
INNOVATION

- Motivations:
 - University
 - Fostering Research on Open Innovation and Service Industry
 - Momentum: Need of external financial support for research.
 - Promoting the creation of university based entrepreneurial projects.
 - Firms
 - “R&D departments are too far away from the real world”
 - “Lack of knowledge/experience/capabilities to perform user based experiments”
 - “Innovation strategy focused on other technologies/solutions”
 - “Breaking the corporate paradigm of cumulative knowledge (organizational inertia, not invented here syndrome)”
 - “Experimenting without damaging brand equity”

- Living Lab Design:
 - Core Knowledge: Retail Service Markets and Technologies
 - Business Model: Private Funding (Fee Based Model)
 - Context: Semi Real World
 - Technology Phase: Mature innovation delivery system, not isolated or standalone technologies, but searching for the missing piece of the puzzle
 - Run: Mainly short run...Firms need successful shots to commit to further involvement
 - Innovation Goal: functional or design incremental improvements in existing technology. Limited contextual research and cocreation
 - Infrastructure: WIFI dedicated network, UCM Store, UCM eStore, Dedicated team of researchers and administrative staff

- Experiment Design:
 - Goal
 - Identification of requirements
 - Early Design
 - Context Analysis
 - Evaluation
 - Budget and Feasibility Study
 - Scenarios (Number of Scenarios= Context x Solutions)
 - Models, check for
 - Incorrect Functional Form
 - Measurement Errors
 - Omitted or latent variables
 - Incorrect distributional assumptions (outliers, truncation and censoring)
 - Sample selection bias
 - Product Architecture
Openness: The Broader, the higher the user incentives
- Scale (Real Experiment and Pilot)
- Sensing (Data Collection and Methods)
 - Observation
 - Continuous (More focused to context research)
 - Action Based
 - Tools
 - Focus Groups
 - System Logs (Computer Based Sensing Tools)
 - Surveys
 - Focus Groups
 - Direct Observation
- Subject Allocation (Context):
One site allocation has limited generalization to the whole population
- Random Sampling vs Allocation of population segments to different solutions
- Control Group
- Manipulation Checks

- Living Labs create Bridging Social Capital (Putnam, 2000)
 - User Selection:
 - Cognitive Distance (Nooteboom, 2000)
 - Sample Stratification and Heterogeneity
 - Learning from OS communities: Concentrating on few lead contributors
 - Knowledge Nature: Tacit (needs face to face and direct interaction) or Codified (Computer Based Methods)
 - Incentives: Academic credits, recognition by the firm (discounts, offers)
 - Bonding Capital is relevant: Prevents Hawthorne Effect



- Next Challenges:
 - High Risk of Technological Bias
 - Market pull...Radical Innovation not very likely
 - Are we wrong? Shane (2001) found that firm formation is more likely when technical fields are younger (us: mature technologies and reverse engineering), when patents are effective (us: service industries), when complementary assets in marketing and distribution are less important (us: innovation tractors), and when there are good options for market segmentation.
 - Are we wrong? Perhaps most LL focus on technology because of the limited generalization of business models experiments in such a restricted user group.
 - We may miss the “social shaping” process of technologies.
 - Replicability of the experiments in different countries?
 - Overcome some political (not minor) issues

- One last thought...

Are the LL the beginning of a new era of X-Management, where the firms will systematically perform experiments not only in product design and innovation decisions, but also in organizational design, strategic management, human resources management, communication planning, and so on? A step backward (or forward?) towards Hawthorne Experiments?

- A few references:
 - Christensen, J.F., Olesen M.H., and, J.S. Kjaer (2005). “The industrial dynamics of Open Innovation--Evidence from the transformation of consumer electronics”, *Research Policy* 34 (10), pp. 1533-1549.
 - Folstad, A. (2008). “Living Labs for Innovation and Development of Information and Communication Technology: A Literature Review”, *The Electronic Journal for Virtual Organizations and Networks* 10, 99-132.
 - Howells, J. (2006). “Intermediation and the role of intermediaries in innovation”, *Research Policy* 35 (5), pp. 715-728
 - Nooteboom, B. (2000). *Learning and Innovation in Organizations and Economies*. Oxford: Oxford University Press
 - Putnam, R. D. (2000). *Bowling Alone*. New York: Simon & Schuster
 - Shane, S. (2001). “Technological regimes and new firm formation”, *Management Science* 47 (9), pp. 1173–1190.



THANKS!
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