European Innovation Policy

Structural Obstacles to a Robust European Innovation Ecosystem

Presented at the

Information Technology and Innovation Foundation (ITIF)

Dr. Burton H. Lee PhD MBA

Lecturer, European Entrepreneurship & Innovation, Stanford School of Engineering

Managing Director, Innovarium Ventures | Silicon Valley, CA

Burton.Lee@stanford.edu

Washington, DC

April 6 2011

Topics

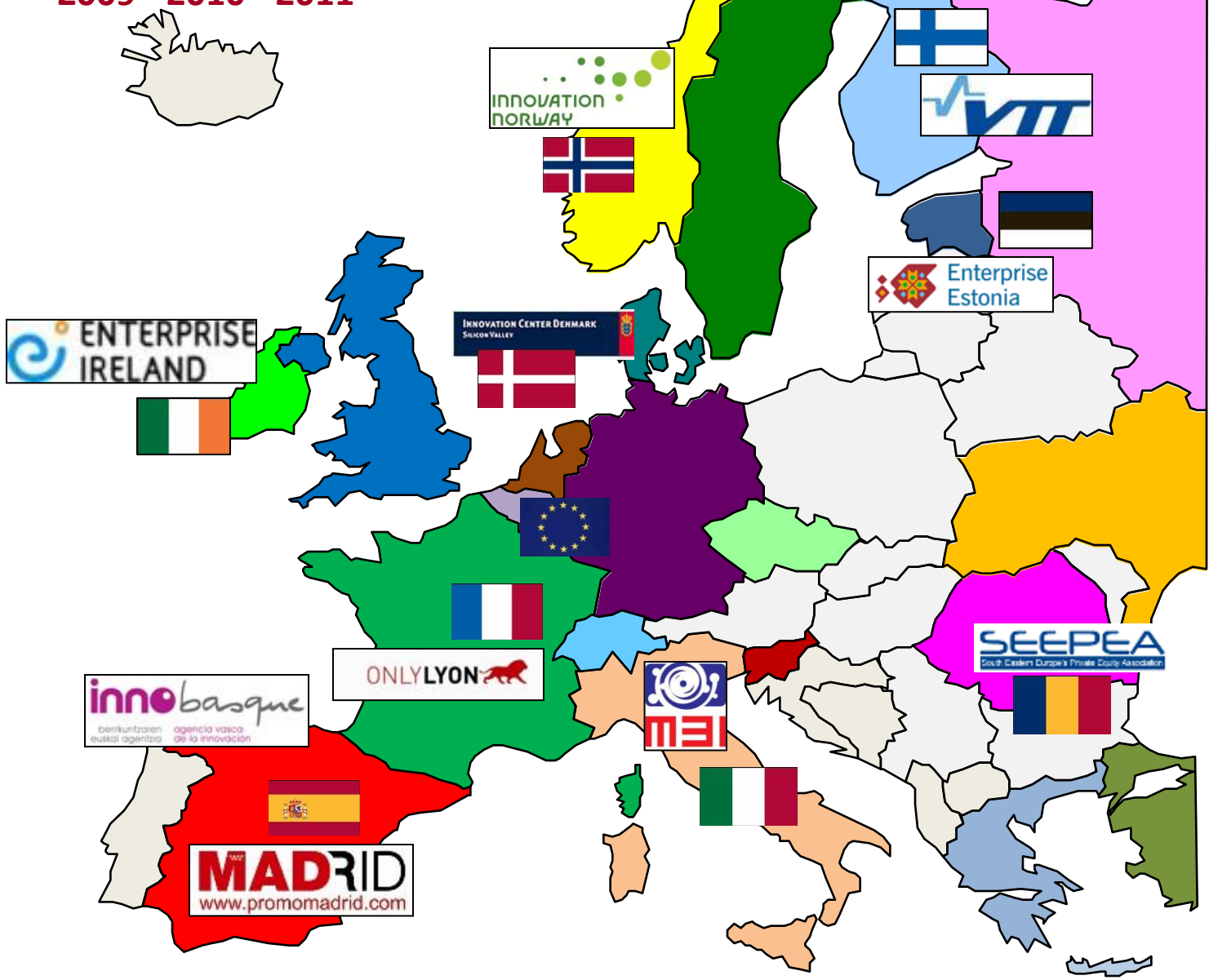
- Scope of this talk
- Structural Impediments to Innovation in Europe
- What is Not on the European Innovation Agenda
- Commercialization of FP Research Outcomes
- University Reform in Europe
- Connecting Europe to Silicon Valley
- Update on Ireland
- Speaker Professional Background and Credentials
- Q&A

Copyright 2011 Burton H. Lee and Stanford University

European Partner Countries, Regions & Companies

Speakers in Stanford Engineering ME421 Graduate Course

2009 - 2010 - 2011



EUROPEAN ENTREPRENEURSHIP & INNOVATION THOUGHT LEADERS SEMINAR

STANFORD ENGINEERING ME421 STANFORD UNIVERSITY

Structural Impediments to Innovation in Europe

Copyright 2011 Burton H. Lee and Stanford University

What is *Not* on the European Innovation Policy Agenda

Copyright 2011 Burton H. Lee and Stanford University

What is – and What is Not – “Innovation Policy” ?

Copyright 2011 Burton H. Lee and Stanford University

What *Is* on the European Innovation Agenda

- Strong R&D programs and funding base
  - Target of 3% of GDP - Government + industry
- Risk Capital formation and investment
  - Increase volume and quality of angel and venture capital investment into startup companies
- Entrepreneur formation
  - University entrepreneurship programs
  - EU entrepreneurship programs
- “Knowledge networks” and “broker” models
  - Supports goal of European integration – but what are the concrete results?
- Tech transfer, IP & commercialization @ universities + research orgs
  - At national level
- Limited legal reform
- Infrastructure
  - Broadband buildout, incubator/S&T park facilities, wet labs

Copyright 2011 Burton H. Lee and Stanford University

What is *Not* on the Innovation Agenda

- Enterprise Innovation
  - European firms lag US companies in adoption of ICT, use of ICT as a strategic technology
    - Chronic underperformance in productivity
    - High cost structures
    - Sometimes addressed in part under “enterprise policy”, but not integrated with broader innovation strategy
- University Reform
  - With the exception of Germany, Finland, UK and a few other countries
  - Jurisdiction of national governments (and not the European Commission)
  - Regional governments too sometimes have jurisdiction here
- Development of core innovation competencies
  - Product design, ICT management
- Commercialization of research from EU research programs
  - Almost no generation of new companies from FP7
- Monitoring of outcomes of EU and national innovation and regional development programs
  - Incubators, S&T parks, “brokers” and “knowledge networks”
- New institutional models of innovation

Copyright 2011 Burton H. Lee and Stanford University

Commercializing FP Research Outcomes

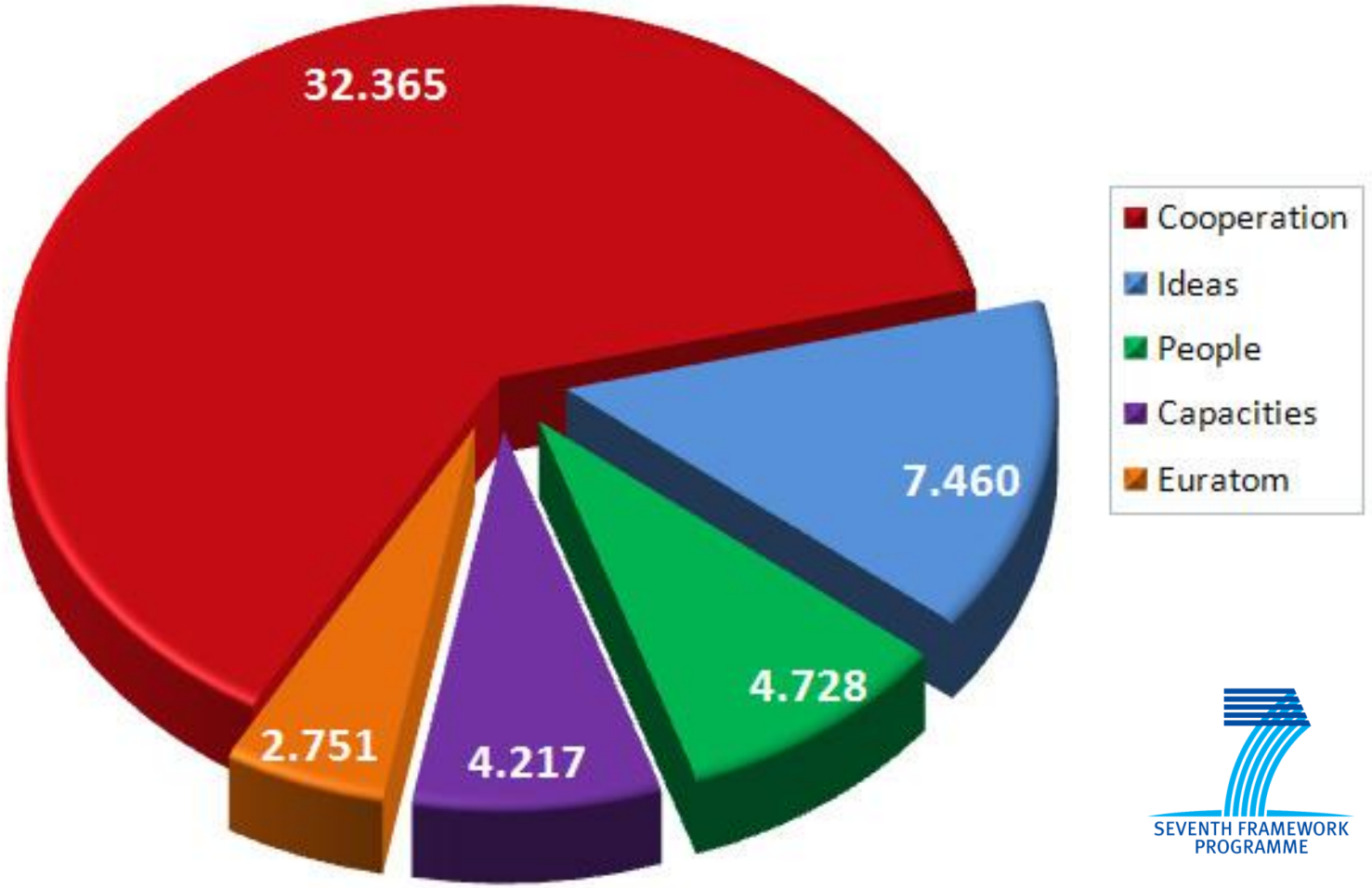
European Union



Copyright 2011 Burton H. Lee and Stanford University

EU FP7 Research Program

€53 Bn (2007 – 2013)



SEVENTH FRAMEWORK PROGRAMME

Copyright 2011 Burton H. Lee and Stanford University

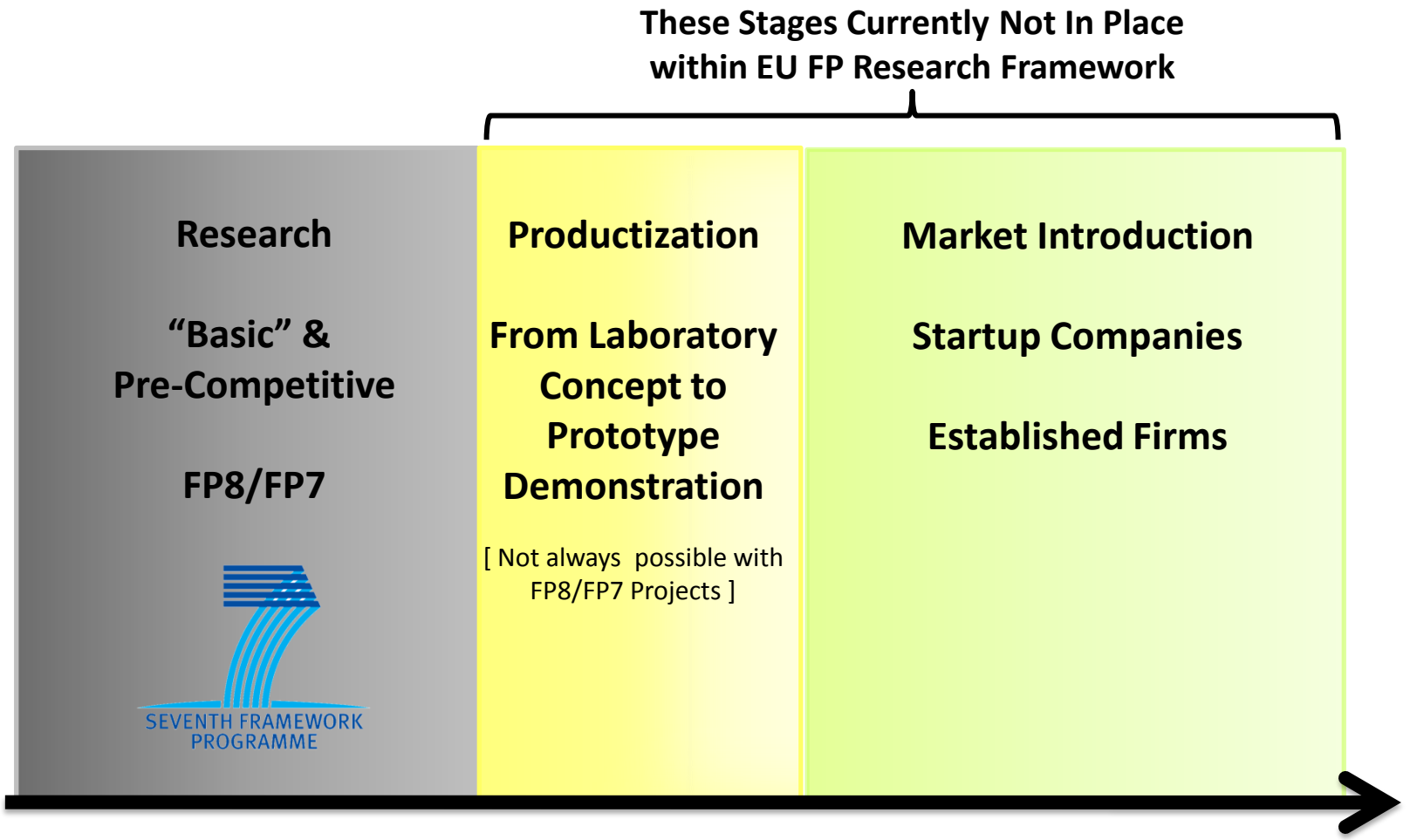
Commercialization of FP Research

- Major disconnects between research and commercialization exist today
  - A broad framework for coupling research and commercialization of related IPR is needed if Europe is to achieve its job creation goals for 2020
  - Without explicit connection between research & commercialization, European Union will lose the opportunity to create thousands of new jobs on a sustained basis
  - Commercialization is not possible in many FP7 projects (due to nature of basic research), but is possible in projects that are closer to industrial application
  - Absence of formal linkages demonstrates lack of understanding of research, and the low value given to research programs and outcomes
  - Apparent ideological opposition to linking research and commercialization in academic and policy-making communities seems rooted in attitudes that “public monies should not generate private returns”, & “universities must remain pure”
  - Little or no coupling of research program performance assessment with program outcomes

- EU research programs (FP7, etc) must have clearly defined connections, routes and steps to commercialization paths, where appropriate
  - Coaching and mentoring
  - Investors: angels, VCs
  - Incubators

Copyright 2011 Burton H. Lee and Stanford University

An FP Commercialization Framework is Needed
Paths from Research to Marketplace Introduction



Copyright 2011 Burton H. Lee and Stanford University

University Reform in Europe

Copyright 2011 Burton H. Lee and Stanford University

University Reform in Europe

Problem Statement

- Majority of European universities are under-performing vs their US equivalents
  - Exceptions: Germany, Switzerland, Netherlands, UK and some Nordic countries
- Often under-funded
- Many are mis-aligned and disconnected from national innovation systems
- Generally poor representation in global rankings
- Jurisdiction over universities resides at national/regional level, not at EU level

Copyright 2011 Burton H. Lee and Stanford University

University Reform in Europe

Problem Statement

- Most European universities are geared to teaching as primary mission, not research
  - Important exceptions in Germany, Switzerland, UK, Netherlands and some Nordic countries
- Generate relatively little intellectual property
- Do not work well with industry
- Generally poor at commercialization of research
- Professors have little industry experience, and see little value in acquiring same
- Little encouragement of entrepreneurship by students

Copyright 2011 Burton H. Lee and Stanford University

University Reform in Europe
Action Agenda (partial listing)

- Reassessment of institutional priorities
  - Shift from teaching to research as core mission
  - Inclusion of “innovation”, “commercialization” and “university-industry relations”
  - May require changes to national legislation
  - Institutional autonomy vs government oversight
- Reorganization of major academic and business units
- Consolidation of universities in clear cases of over-supply or duplication
- New university financial and business models
  - State vs private support
  - Student fees structure
  - Diversification of funding sources
  - Control of funds and their disposition

Copyright 2011 Burton H. Lee and Stanford University

Recent Examples of University Reform

(partial listing, not comprehensive)

- Germany
  - Excellenz Initiative
- Ireland
  - “Innovation Alliance” between Trinity College Dublin and University College Dublin
  - Strategic alignment between NUI Galway and University of Limerick
- Finland
  - Consolidation of 3 institutions of higher education (Helsinki School of Economics, Helsinki University of Technology, Arts and Design School) into new Aalto University
- Luxembourg

Copyright 2011 Burton H. Lee and Stanford University

Connecting Europe to Silicon Valley

Copyright 2011 Burton H. Lee and Stanford University

Why Silicon Valley is Important for Europe

- Quicker scale-up and globalization of new companies
  - Venture capital, talent, customers, markets
- Customers and markets for existing indigenous companies
- Access to latest technology in most domains
- Thought leadership at a global scale often starts here
- Training of European scientists, entrepreneurs, investors and executives
- Alternative university innovation models and practices
- Hub of the global business network
- Close ties to Asia
  - China, Singapore, Korea, India, Japan
- Importance of Silicon Valley is increasing
  - New EU regions coming to Silicon Valley on a regular basis

Copyright 2011 Burton H. Lee and Stanford University

Major Recommendations

- EU Innovation and Research Strategy should consider how to directly engage with Silicon Valley

- Europe is not on par with China, India and Japan in its engagement with Silicon Valley institutions
  - The EU is falling behind in the global innovation race

Copyright 2011 Burton H. Lee and Stanford University

EU Innovation Policy
Other Issues that Deserve Attention

- Product design teaching and research programs in engineering and medical schools
  - Elevate status of product design to formal engineering discipline & domain
  - Not taken seriously in many European universities and companies
    - Exceptions: Germany, Netherlands, Denmark, Sweden, Finland, UK

- Provide financial support to **Student Entrepreneurship Societies** at top 100 universities in Europe
  - Develop stronger innovation and entrepreneurship stakeholder communities inside universities

- EU Innovation Center in Silicon Valley
  - Support for Internationalization of European SME's (DG ENTR)
  - Long term base for understanding Silicon Valley innovation ecosystem, & developing relationships with other US and Asian clusters

- Investigations/Studies that are needed
  - Silicon Valley impact on job creation in Europe
  - Impact of ICT utilization and social media use & firm valuations/performance

Copyright 2011 Burton H. Lee and Stanford University

Update on Ireland Innovation Strategy

- PM's Innovation Taskforce completed Final Report - Mar 2010
  - Reform of bankruptcy law and regulations
  - Rationalization of University IP, tech transfer and commercialization mechanisms
- Accomplishments over past year
  - Increase in level of risk capital available, from domestic and international sources
  - New collaborations between Stanford Medicine, Stanford Engineering and NUI Galway + Trinity College Dublin (in progress)
    - Product design teaching and research
- No legislative changes enacted during 2010 - 2011
- New government elected January 2011
  - New Taoiseach Kenny is assessing next steps, building team

Copyright 2011 Burton H. Lee and Stanford University

Professional Background & Credentials

Copyright 2011 Burton H. Lee and Stanford University

Speaker Professional Experience
European and US Innovation Policy

- Lecturer in European Entrepreneurship & Innovation, Stanford Engineering School
- FP7 Expert Evaluator, European Commission, Brussels, Belgium
  - FP7 Space evaluations (2nd year)
- Cooperation projects with European Commission @ Silicon Valley
  - DG ENTR "Innovation Bridges" conference, May 2010
- Irish National Innovation Taskforce, Dublin, Ireland
  - Appointed Member, Office of the Prime Minister, June 2009 – March 2010
- Recent Talks on Innovation Policy
  - Office of the Prime Minister, Tallinn, Estonia
  - National Research & Innovation Council - Helsinki, Finland
  - Agency for Science, Technology & Innovation - Copenhagen, Denmark
- Recent Professional Engagements
  - Denmark's Central "Midt" Regional Authority – innovation ecosystem assessment
  - Angel Investor Training Workshop, Finland
- University: University of Munich (LMU), Soviet Economics
- SBIR Program Reviewer (Small Business Innovative Research)
  - National Science Foundation (NSF)
  - National Institutes of Health (NIH)
- Innovation Policy Advisor, Gov. Bill Richardson, Presidential Campaign (2008)

Copyright 2011 Burton H. Lee and Stanford University



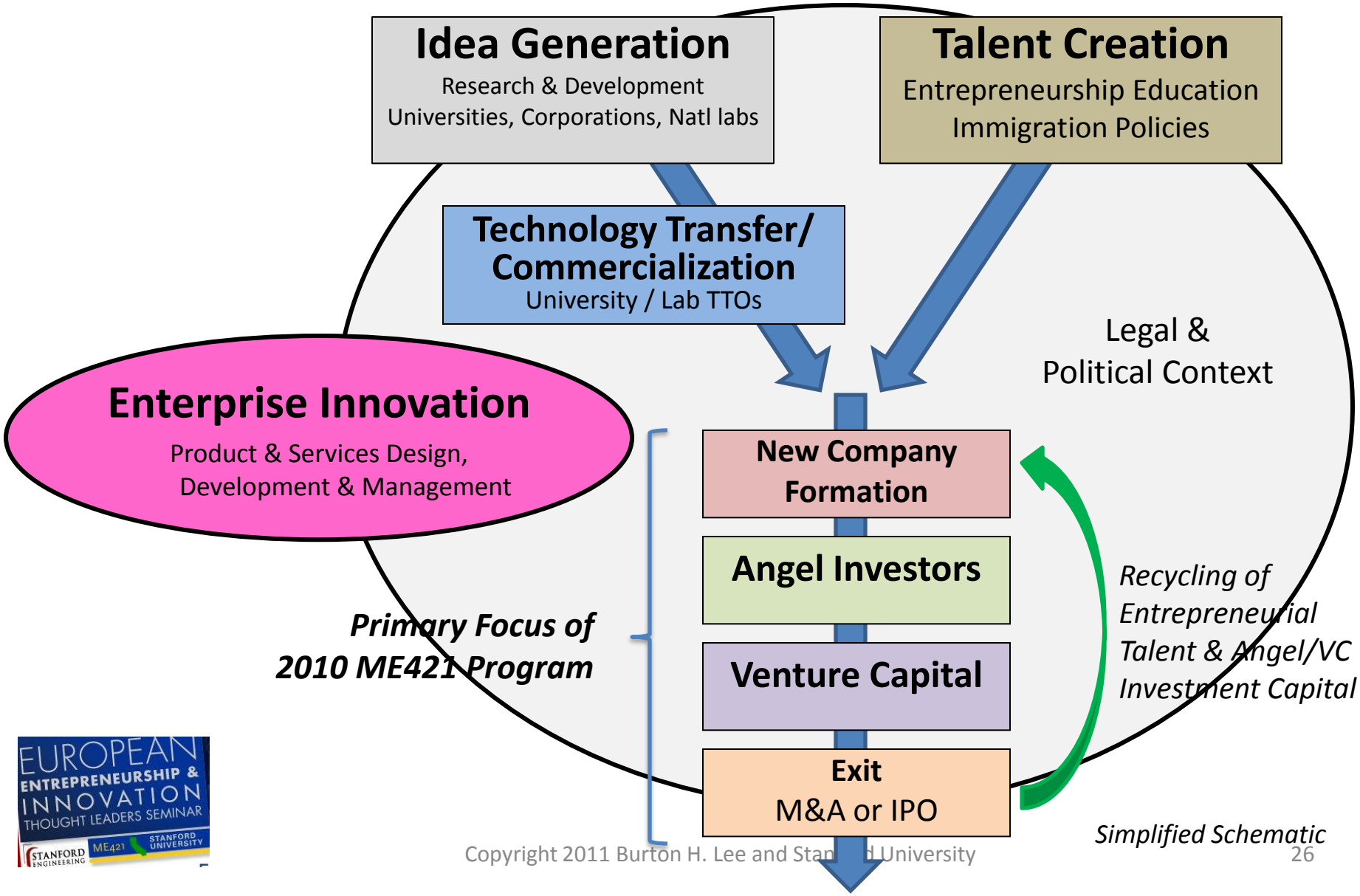
Teaching Team:

Dr. Burton Lee, Lecturer
Prof. Larry Leifer
Prof. Elisabeth Pate-Cornell

http://www.europeanentrepreneursatstanford.com
http://me421.stanford.edu

Copyright 2011 Burton H. Lee and Stanford University

European Innovation Ecosystem



Simplified Schematic

Copyright 2011 Burton H. Lee and Stanford University

First Session – Winter 2011

Jan 3 2011

- **European Incubators in Silicon Valley**
  - **Aldo Cocchiglia**, **M31 USA,** Santa Clara (Italy/Silicon Valley)
    - Panel Moderator
  - **Bjoern Herrmann**, **blackbox**, Atherton (pan-European)
  - **Nicolai Wadstrom**, **Bootstrap Labs,** SFO (Sweden)
  - **Peter Laanen**, **"Holland in the Valley" Incubator**, SFO (Netherlands)
  - **Clement Alteresco**, **pariSoma** Innovation Loft, SFO (France)
  - **Gioia Deucher**, **swissnex San Francisco**, SFO (Switzerland)





Copyright 2011 Burton H. Lee and Stanford University

Third Session – Winter 2011

Jan 24 2011

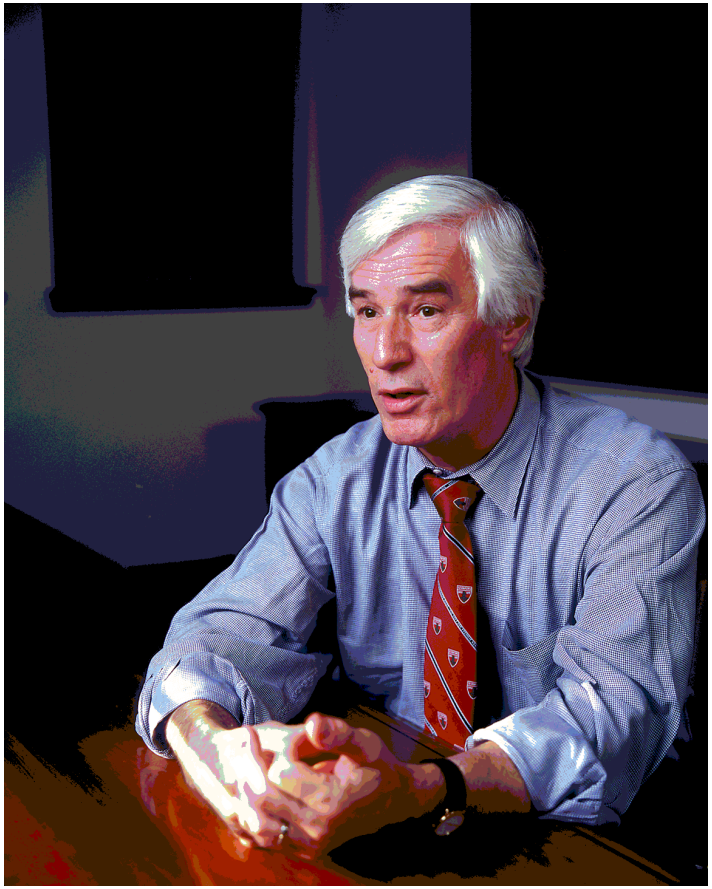
- **European SuperAngels in Silicon Valley**
  - **Aydin Senkut; Felicis Ventures (Turkey)**
  - **Jeff Clavier, SoftTech VC (France)**



Copyright 2011 Burton H. Lee and Stanford University

Final Session – Winter 2011

March 7 2011



Prof. Gerhard Casper

President Emeritus,
Stanford University

"University Reform in Germany"

Copyright 2011 Burton H. Lee and Stanford University

Resources

Copyright 2011 Burton H. Lee and Stanford University

Presentations and Documents Archives

European Innovation & Entrepreneurship



www.scribd.com
Account name: "*BurtonLee22*"



www.slideshare.net
Account name: "*burtonlee*"

Copyright 2011 Burton H. Lee and Stanford University

Stanford's Online Communities

European Entrepreneurship & Innovation @ Silicon Valley

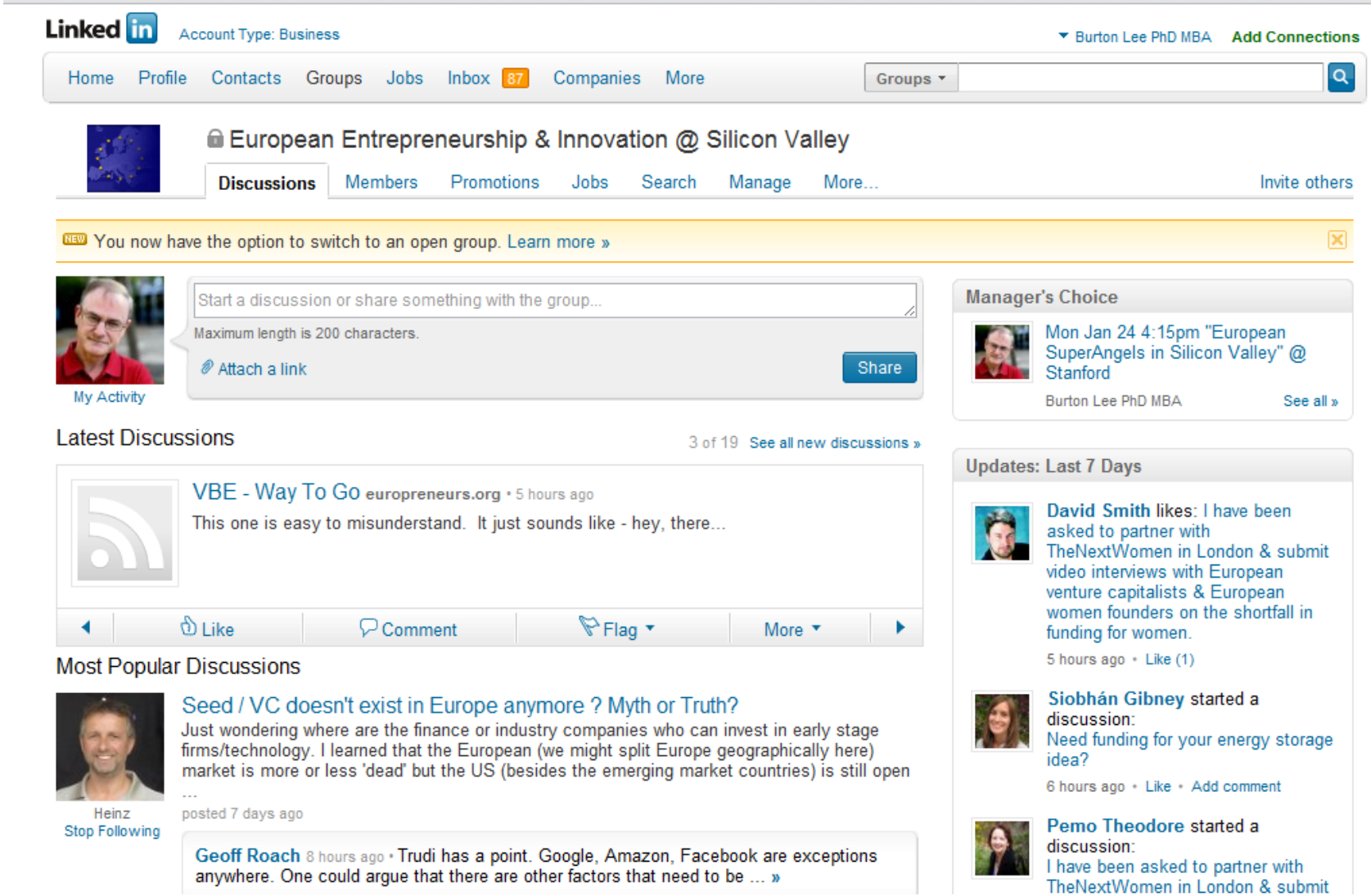
- Join us @ LinkedIn, Facebook & Twitter
  - LinkedIn members: **3850+**
  - Facebook members: **2200+**
  - Twitter: *europreneurs*

  - Intended to facilitate professional, student and faculty networking outside of class

  - Open to the Public in Europe and US at no charge

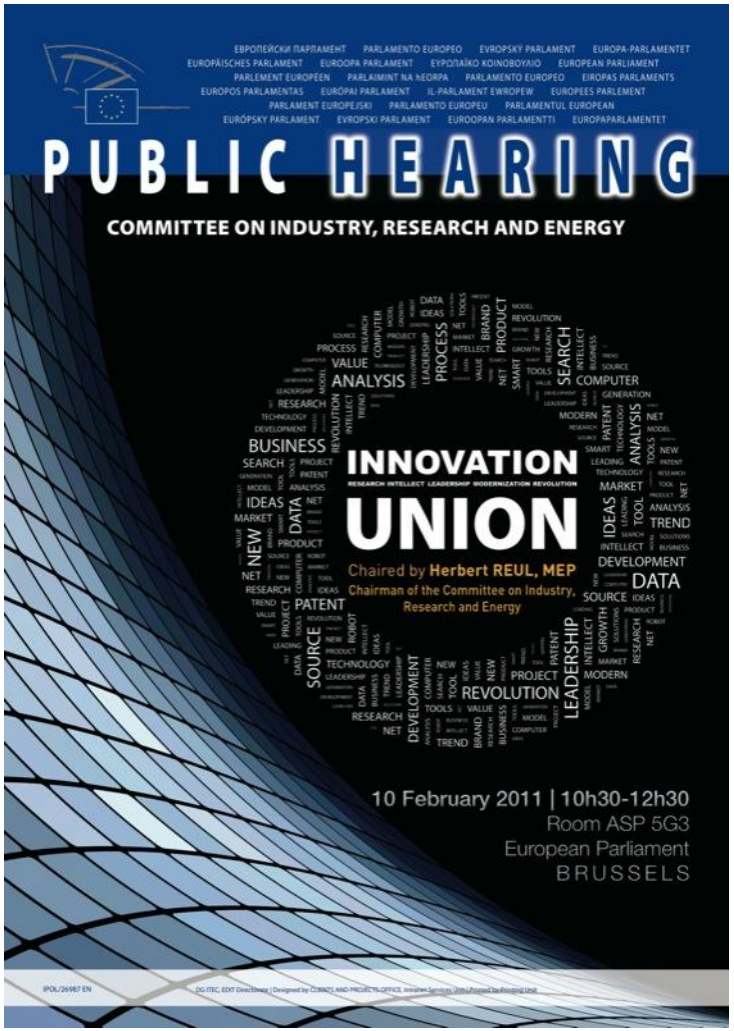
Copyright 2011 Burton H. Lee and Stanford University

LinkedIn Group Discussions



Copyright 2011 Burton H. Lee and Stanford University

Testimony @ the European Parliament
EU Innovation Policy



EUROPEAN PARLIAMENT - PARLEMENT EUROPÉEN
EUROPÄISCHES PARLAMENT

DIRECTORATE GENERAL FOR INTERNAL POLICIES
COMMITTEE ON INDUSTRY, RESEARCH and ENERGY (ITRE)

Mini Hearing on
"Innovation Union- Transforming Europe for a post-crisis world"
10th February 2011
ASP 5G3
10h30 - 12h30

10:30-10:35	**Herbert REUL**, ITRE Chairman Welcome & Opening Remarks
10:35-10:45	**Judith MERKIES**, ITRE Rapporteur on INI report on Innovation Union Opening Remarks
10:45-11:00	**Dr. Peter KOTAL,** Managing Director QTH Innovation Europe, ARKO Consult
11:00-11:15	**Dr. Reinhold ACHATZ,** Corporate Vice President Siemens AG, Head of Siemens Corporate Research and Technologies, Head of Siemens Corporate Development Centre
11:15-11:30	**Marc SCHUBLIN,** Head of Mandate Management, Product Development & Incubation, European Investment Fund
11:30-11:45	**Petri VASARA,** Head of Global Consulting Practice in Innovation, Pöyry Management Consulting Oy, Finland
11:45-12:00	**Dr. Burton LEE,** Lecturer, European Entrepreneurship & Innovation, Stanford School of Engineering; Managing Director, Innovarium Ventures

Copyright 2011 Burton H. Lee and Stanford University

Follow On Reading/Inquiries
Irish Innovation Taskforce Final Report

- Complete text of Final Report available online:
  - http://www.taoiseach.gov.ie/eng/Innovation_Taskforce/

- European Entrepreneurship & Innovation @ Stanford
  - http://me421.stanford.edu



Copyright 2011 Burton H. Lee and Stanford University

INNOVARIUM VENTURES

Working in Silicon Valley, Europe, Latin America and Washington DC

- Senior financial, technical and strategy advisory services for global technology innovation organizations
- Professional Services
  - Technology startup and growth companies
    - Interim CXO and Advisory Board roles
    - Expert guidance & decision-making at the interface between market/customers, technology and finance
    - Business development – industrial and government
    - Business plan preparation/research/review; Government Grant proposal preparation/review
    - Coaching and mentoring of CEOs and other CXO-level managers
    - Assistance with government regulatory and policy agencies
  - Angel, venture capital and private equity Investors
    - Fund strategy, team selection and market positioning
    - Due diligence: technical, financial, strategy and business models
  - Public and non-profit R&D laboratories
    - Technology transfer & partnerships; venturing and spin-out of companies; strategy and business development; grant applications
  - Research universities
    - Innovation-related models, policies and practices
    - Technology transfer and licensing; industry partnerships and relations; development and strategy; grant applications
  - National and regional government agencies
    - Innovation policy formulation, analysis and review; cluster development strategy; economic impact studies
    - Science & technology policy formulation, analysis & review: space, aviation, nanotechnology, software/AI/robotics, manufacturing
- Selected recent clients
  - US/European technology startup companies – alternative energy, robotics/AI, software, Internet, nanotech
  - Venture and private equity funds – aerospace, nanotechnology, ICT, computing, advanced materials, clean tech
  - Office of the Prime Minister, Ireland; European Commission; National Science Foundation; NASA, National Academies
- **Dr. Burton Lee PhD MBA, Managing Director**
  - Contact: Burton.Lee@innovarium.net Based in Palo Alto, CA near Stanford University
  - Bio/References: LinkedIn Profile
  - Lecturer, European Entrepreneurship & Innovation, Stanford School of Engineering



Copyright 2011 Burton H. Lee and Stanford University

- ***Thank You !!***

- **Dr. Burton H. Lee PhD MBA**
  - Burton.Lee@stanford.edu
  - http://me421.stanford.edu



Copyright 2011 Burton H. Lee and Stanford University