CS 4081 ENTREPRENEURSHIP & HIGH-TECH VENTURE CREATION

INTRODUCTION TO ENTREPRENEURSHIP

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(My) Course Objectives

- To deliver an informative and compelling course
- To give students a deep appreciation for the current and potential role of *high-tech* entrepreneurship in Ireland
- To equip students with the knowledge on how the *high-tech* entrepreneurial process works
- To inspire students to work with/for *high tech* startups (*Straw Poll*)
- To perhaps inspire one or more students to start up a company over the course of their career
- High-Tech Business 101

Credit

- Considering...
  - This is a core course for 4th Year Computer Science/MSISS
  - Assessment by Examination is inappropriate
  - My role is more to engage rather than to grade
- Marks for the course will be entirely by continuous assessment
  - A roll will be kept (2 Lectures + 1 Talk Slot)
  - Individual Exercises
  - Team Exercises

Course Topics

- 1. Introduction to Entrepreneurship
- 2. Opportunity Recognition
- 3. Feasibility Analysis
- 4. Elements of a Business Plan
- 5. Making the Pitch
- 6. Forming the team
- 7. Company Forms & Raising Finance
- 8. Marketing & Promotion
- 9. Protecting Intellectual Property
- 10. Overflow

Entrepreneurship: Successfully Launching New Ventures, ~~3/e~~ 5/e

Bruce R. Barringer

R. Duane Ireland

Recommended Text

Course Website

☐ Slides and links to support material will be available on the course website:

☐ http://www.scss.tcd.ie/~omahony/cs4081

Exercise	Deadline	% of marks
Attendance		10%
Track-a-Startup – Group Presentation	End Wk 3	15%
Analyst for a Day – individual pitch	From Wk3 – wk 11	10%
Mini Business Plan	Mid wk 10	50%
Promotion Assignment (press release)	Mid wk 12	15%

Relevant Business Plan Competitions

- Intertrade Ireland Seedcorn Competition – closes May

- studententrepreneurawards.com – aimed at 3rd level students, run by EI & InvestNI – 10K prize – entry by April

- Qualcomm Qprize – December deadline– related to networking/cellular

- Trinity Entrepreneurial Society – Dragons Den(Dec)

€3,000 prize [https://www.facebook.com

/TrinityEntrepreneurial/]

- TCD Launchbox initiative (launchbox.ie), TCD Blackstone Launchpad (launchpadtrinity.org)

WHAT IS ENTREPRENEURSHIP? (FOR COURSE PURPOSES)

□ Video from MIT OCW project Distinguishing SME from IDE (up to 3:30)

ROLE OF ENTREPRENEURSHIP IN IRELAND TODAY

Ireland :Entrepreneurship, 2014

☐ How Entrepreneurial is Ireland Today?

	Total Early-Stage Entrepreneurial Activity (TEA)		Discontinuation of Business
Aspiring Entrepreneur	Nascent Entrepreneur Involved in a setting up a business	New Firm Entrepreneur Owner-Manager of a new business (up to 3.5 years old)	Established Entrepreneur Owner-Manager of an established business (more than 3.5 years old)
CONCEPTION		FIRM B	

Source: Adapted from GEM Global Report 2010

RATES OF ACTIVITY IN POPULATION

	Male	Female
Nascent entrepreneurs	10%	4.2%
New business owners	5.5%	3.2%
Early stage entrepreneurs (TEA)	14.5%	7.3%
Established owner-managers	5.8%	3%
Exited a business (not continued)	2.5%	1%
Aspire to start a business	19%	8%

Ireland ranked 15th of 25 countries in terms of rate of new business creation
Source:Forfas: Global Entrepreneurship Monitor

Ireland : Entrepreneurship, 2016

WHO ARE THEY?

EDUCATION
71% HAVE POST SECONDARY EDUCATION

AGE
- **20%** 18-29 YRS
- **32%** 30-39 YRS
- **24%** 40-49 YRS
- **24%** 50-64 YRS

RESOURCES (HOUSEHOLD INCOME)
- **20%** LOWEST THIRD
- **23%** MIDDLE THIRD
- **57%** HIGHEST THIRD

GENDER
- **63%**
- **37%**

MOTIVES
- 13% NECESSITY
- 87% OPPORTUNITY

START-UP TEAMS
- 55%
- 45%

35,000 NEW BUSINESS OWNERS IN 2016

PLACE OF BIRTH AND CURRENT RESIDENCE

4 IN 10 BORN OUTSIDE IRELAND

REGION OF RESIDENCE
- **16%** Border Midlands
- **31%** West Mid-West South-West
- **53%** Dublin Mid-East South-East

SECTORS
- **29%** BUSINESS SERVICES
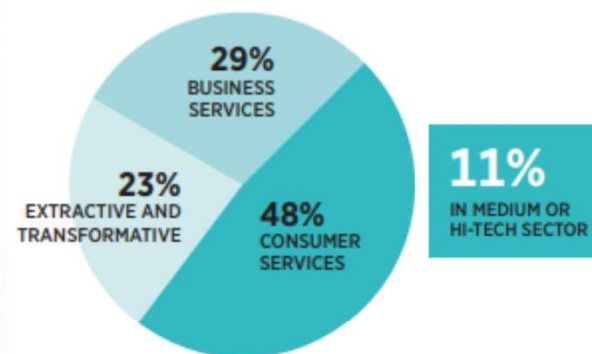- **23%** EXTRACTIVE AND TRANSFORMATIVE
- **48%** CONSUMER SERVICES
- **11%** IN MEDIUM OR HI-TECH SECTOR

JOBS IMPACT
70% WILL BE AN EMPLOYER WITHIN 3 1/2 YEARS OF STARTING

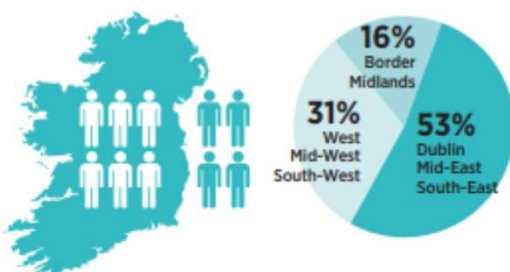## JOBS EXPECTATIONS
39% EXPECT TO HAVE 10+ JOBS IN 5 YEARS

INTERNATIONAL ORIENTATION
- **80%** INTERNATIONAL CUSTOMERS (SOME REVENUE FROM OVERSEAS)
- **27%** BORN GLOBAL (>25% REVENUES FROM OVERSEAS)

HOW IMPORTANT IS THE HIGH-TECH SECTOR IN IRELAND?

The Irish Economy — at a Glance using 2012 figures

Population
4.5m

Children &
>65
1.5m

Working Age
3m

Not in
Employment
1.2m

Full &
Part-time
1.8m

Wholesale &
Retail 0.3m

Financial &
Bus Services
0.1m

Construction
0.1m

Manufacturing
& Other Industry
0.3m

Remainder:
Health, Edu,
Agriculture
1.0m

Multinational
~ 150,000

Indigenous
~ 150,000
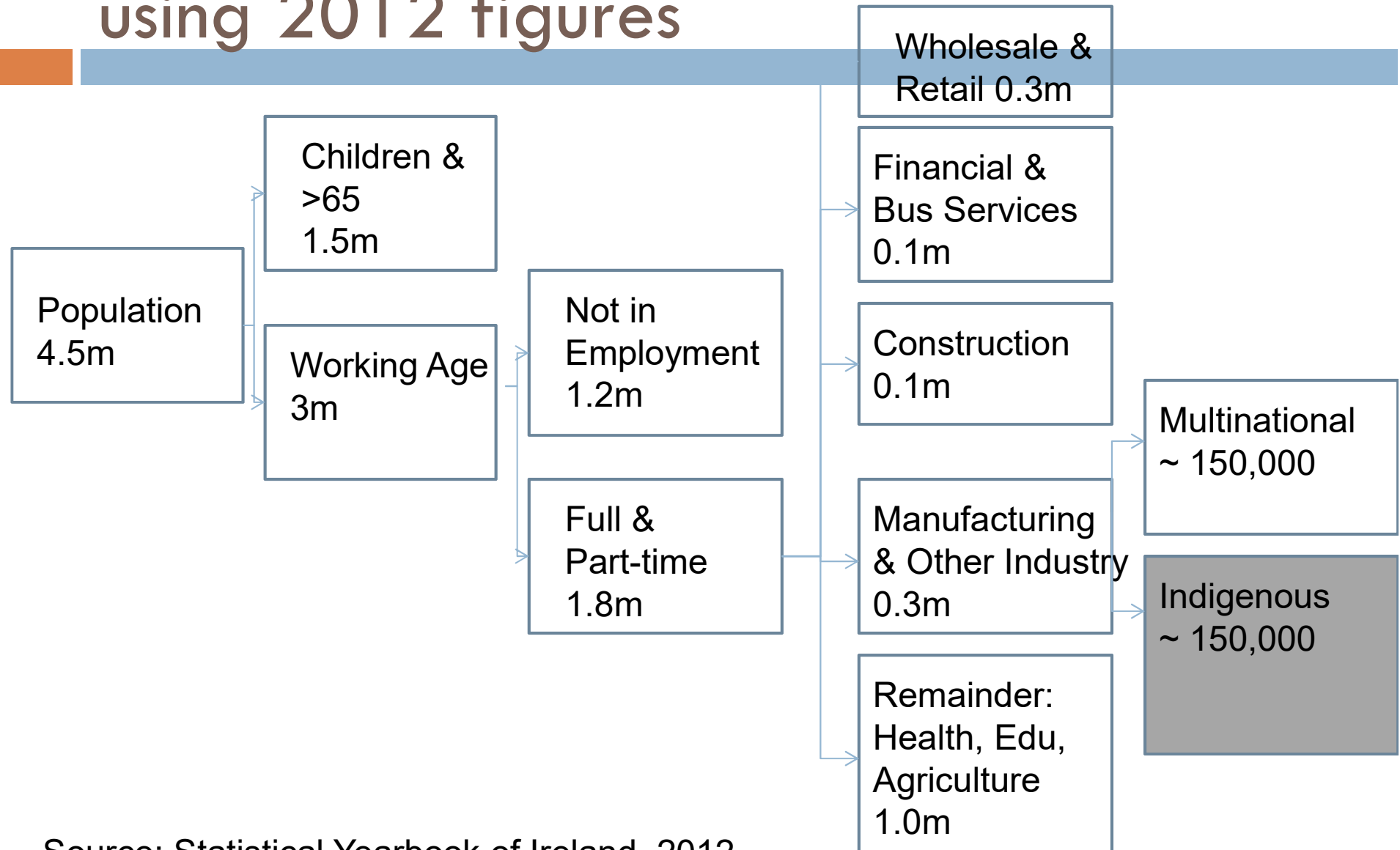
Source: Statistical Yearbook of Ireland, 2012

IRELAND'S STRATEGY FOR HIGH-TECH & ENTREPRENEURSHIP
IS IT WORKING?

Ireland and the Smart Economy

- Ireland like many countries is trying to create a 'Silicon Valley' type of environment

- Some ingredients
  - Big emphasis on science and maths at schools
  - Entrepreneurship training for all
  - High quality undergraduate education in Science & Engineering
  - Doubling the number of PhDs
  - IDA focus on research-based jobs
  - Attend to Entrepreneurial eco-system: Mentors, Role models, Seed capital, VC availability, friendly tax laws

Advice from a Guru

- Daniel Isenberg, Director of Babson Entrepreneurship Ecosystem Project
HBR article [2010] entitled "How to Start an Entrepreneurial Revolution in 6 months
  - Revolutions .....start local
  - ..need participants ... require resources...need revolutionaries ... Need a call to action... Need an inner council...need leadership
  - http://www.youtube.com/watch?v=IGXsFS5t5Vg (2 minutes)

High Tech Job Creation

- IDA
  - In 2017, created 19,851 jobs, net increase 10,674
    - (2016 Investments include: Oracle, First Data, Credit Suisse, hubspot, Amaon...)
  - Target for period 2015-2019 is 80,000 jobs created
- Enterprise Ireland
  - In 2017, created (19,705) jobs, net increase of 10,309
  - Total number in employment: 209,338
- Venture Investments €994m in ~221 firms in 2017,(ivca.ie) €12.8m angel inv in 45 firms

Entrepreneurship Stats

- Enterprise Ireland – 91 new High Potential Start-up companies in 2016

Point of Comparison – Israel

- Population 7.5m
- In 2007
    - Invests 4% of GDP on R&D (Ireland: 1.57%)
    - 100 Israeli companies listed on the NASDAQ 80% in High Technology
    - 20% of the population are University Graduates
    - 84 Venture Capital Funds operating (Ireland: 31)
    - 462 companies raised $1.76bn in VC (Ireland: approx 20 companies raising €226m)
        - 1st 4 mins of
          https://www.youtube.com/watch?v=KHLyANGmLjQ

A Contrarian View

- Not everyone believes in the "knowledge economy" and the concept of "innovating our way out of recession"

- Example: www.finfacts-blog.com – [a news website run by Michael Heneghan] – some points

  - Too much money being spent on research & high-tech

  - No jobs will come from it

  - Idea of university-spinouts from Silicon Valley is over-hyped – mostly small companies that did not employ many people

  - Israel succeeded because of Russian imigrants

  - Should spend our money on agriculture & tourism

Key points

- The High-Tech Sector in Ireland is small, but more impactful than you might think
  - Dominated by the multi-national sector
  - Doubling the Indigenous Sector would have a huge impact
- Ireland is depending on the Knowledge Economy to deliver future prosperity
  - So are many others
  - Ireland lags many of the leading countries in some key aspects

Key Points...

- High Tech Venture Creation is a key part of the knowledge economy

- There is no manual on how to do this

Team Assignment #1

- Form teams of 4/5 students [Visiting Students will be added to teams]
- Select a Irish or UK startup company from anytime over the last 10 years
  - Try to pick one that is sufficiently mature
    - Not one that has just won a pitching competition
    - DISCUSS IT AMONG YOUR TEAMS
- Prepare a short (4 minute) presentation on the company showing:
  - Gap in the market
  - Team – how did it change over time
  - Money- how much was invested, when
  - What was the plan for Exit?
  - Why was this company (un)successful
  - Submit team members and company to me by e-mail by monday
  - Startups on Enterprise Ireland: "Seed and Venture Capital Report" or IVCA.IE Venture Pulse