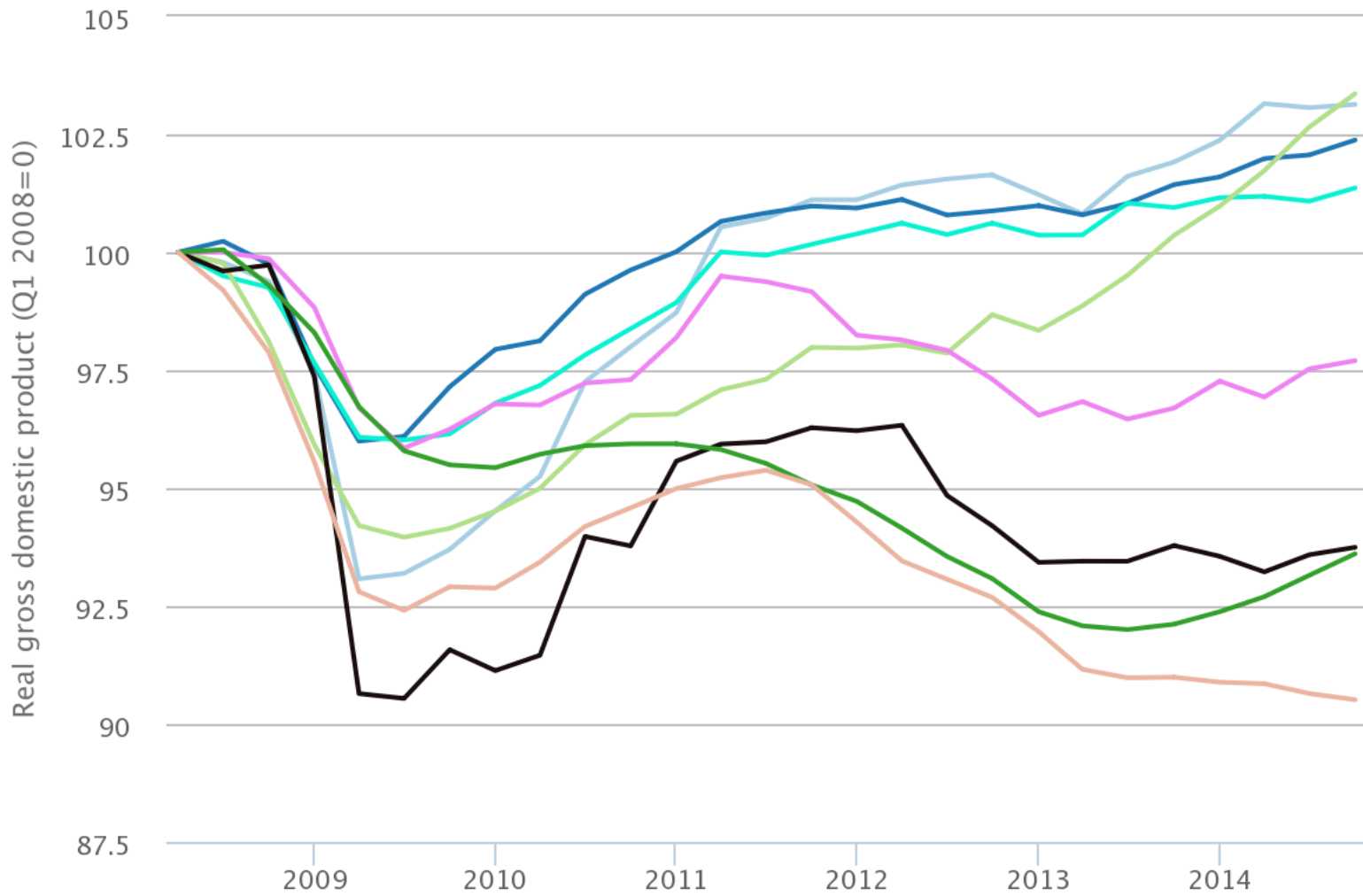# Why Should We Teach Technological Entrepreneurship in Universities

Dan Shechtman

Technion, Haifa, Israel
ISU, Ames, Iowa, USA
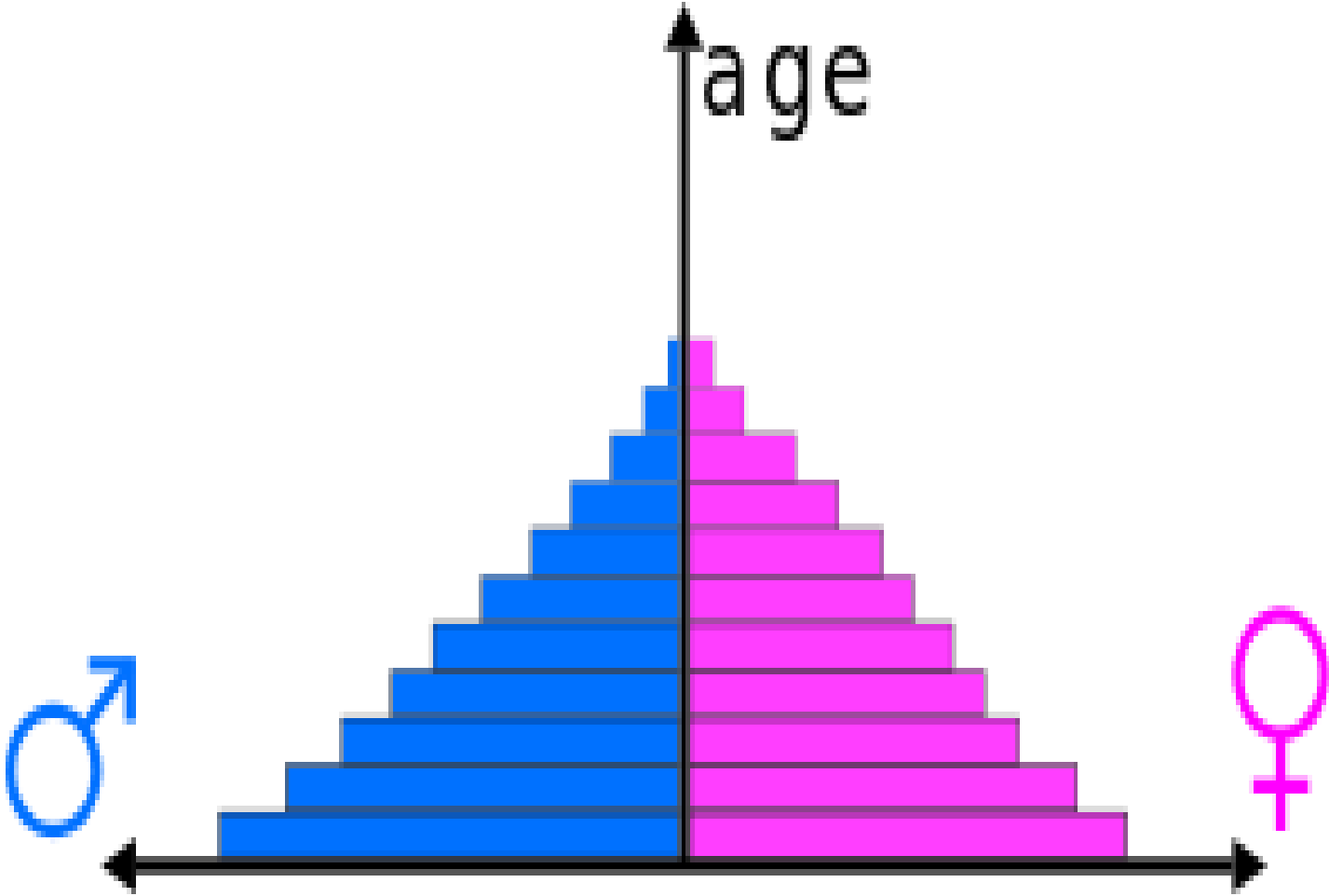
Finland's stuttering recovery

Source: ING

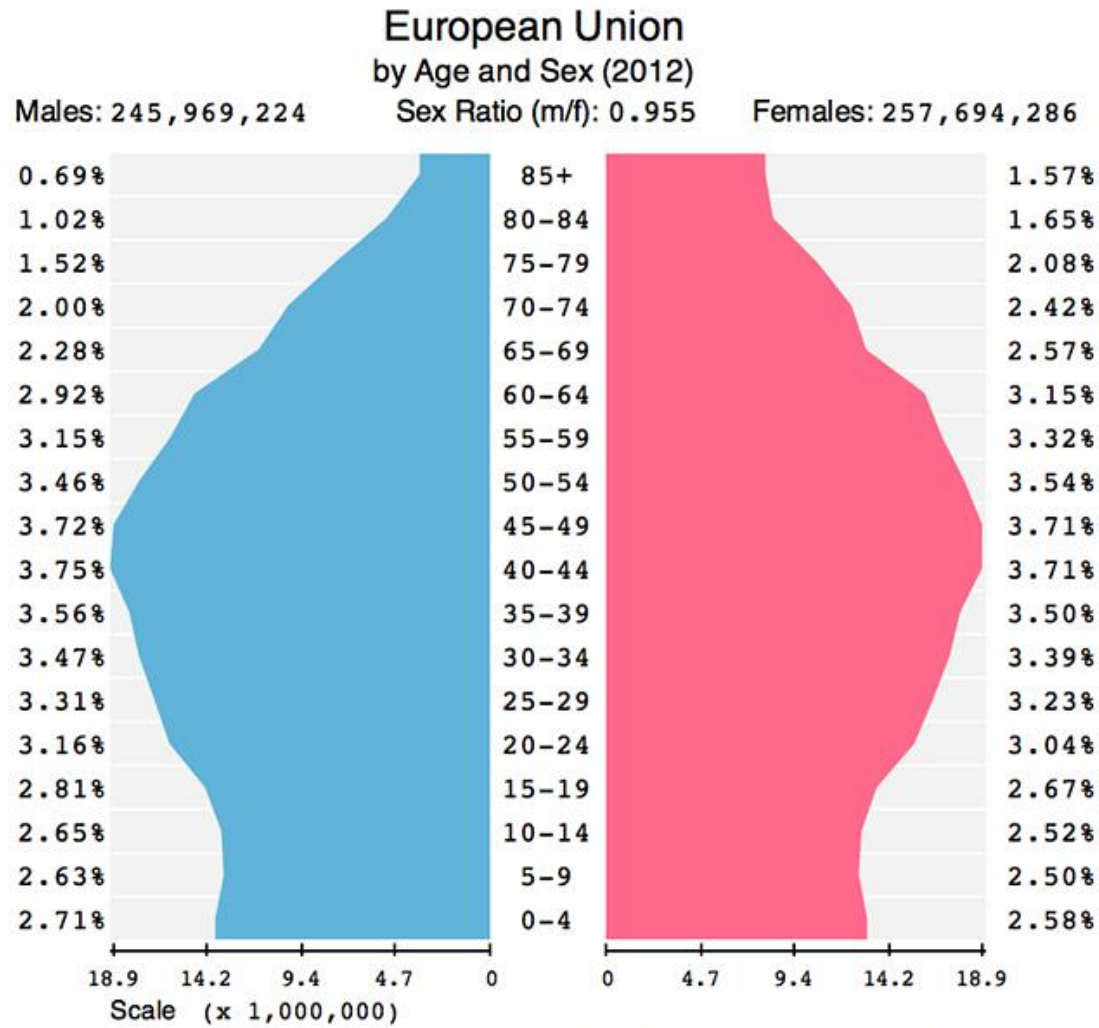**Germany** — **Belgium** — **France** — **UK** — **NL** — **Finland** — **Spain** — **Italy**

Highcharts.com

Demographic Pyramid

Population growth

Age

65

15

Male   Female

Stage 1 - expanding   Stage 2 - expanding   Stage 3 - stationary   Stage 4 - contracting

Demographic Pyramid of the European Union

European Union
by Age and Sex (2012)

Males: 245,969,224   Sex Ratio (m/f): 0.955   Females: 257,694,286

Males	Age	Females
0.69%	85+	1.57%
1.02%	80-84	1.65%
1.52%	75-79	2.08%
2.00%	70-74	2.42%
2.28%	65-69	2.57%
2.92%	60-64	3.15%
3.15%	55-59	3.32%
3.46%	50-54	3.54%
3.72%	45-49	3.71%
3.75%	40-44	3.71%
3.56%	35-39	3.50%
3.47%	30-34	3.39%
3.31%	25-29	3.23%
3.16%	20-24	3.04%
2.81%	15-19	2.67%
2.65%	10-14	2.52%
2.63%	5-9	2.50%
2.71%	0-4	2.58%

18.9   14.2   9.4   4.7   0   0   4.7   9.4   14.2   18.9

Scale   (x 1,000,000)

Total Population: 503,663,510

Eurostat, 2013

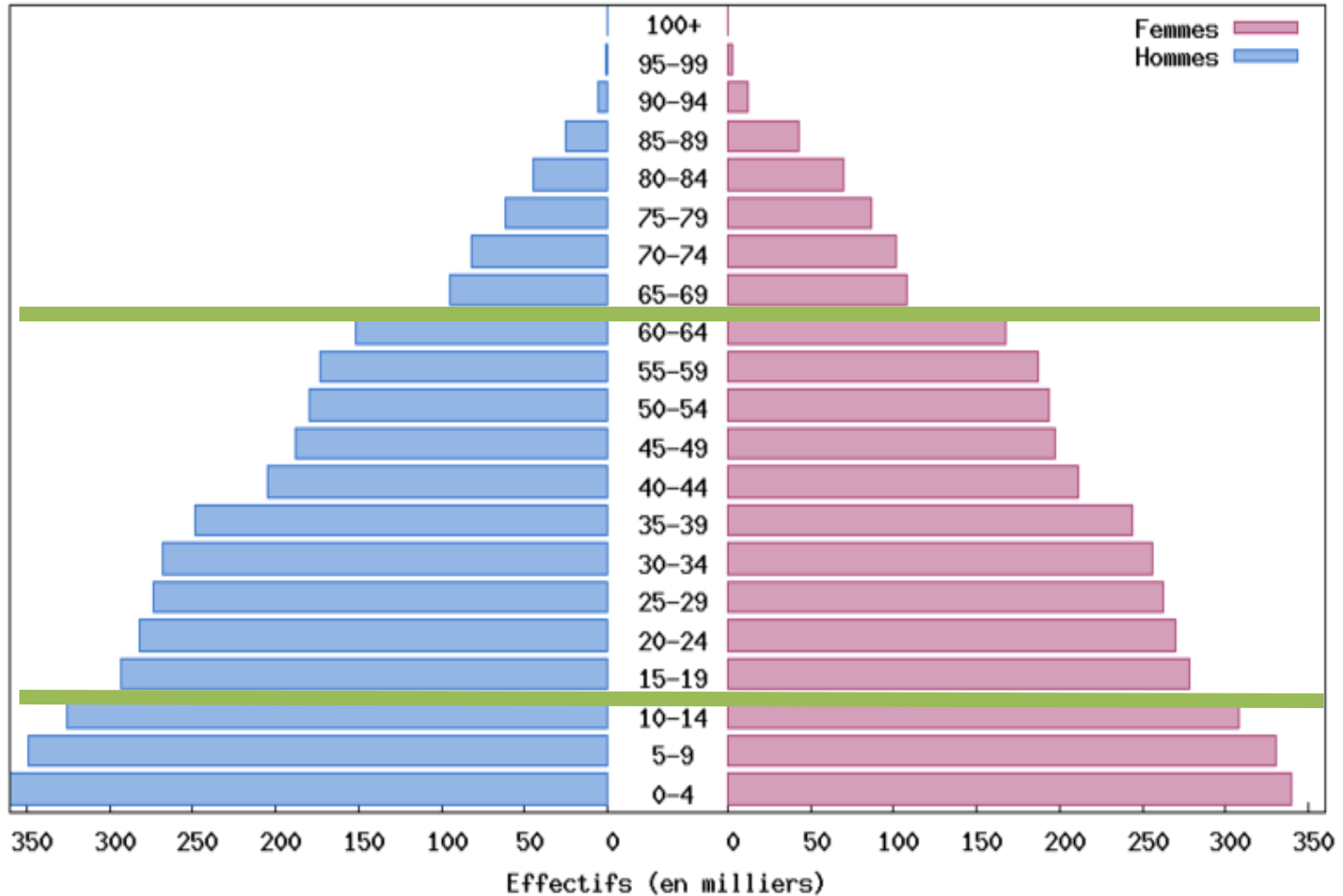www.viewsoftheworld.net

Demographic Pyramid of Finland

Demographics of Israel 2010
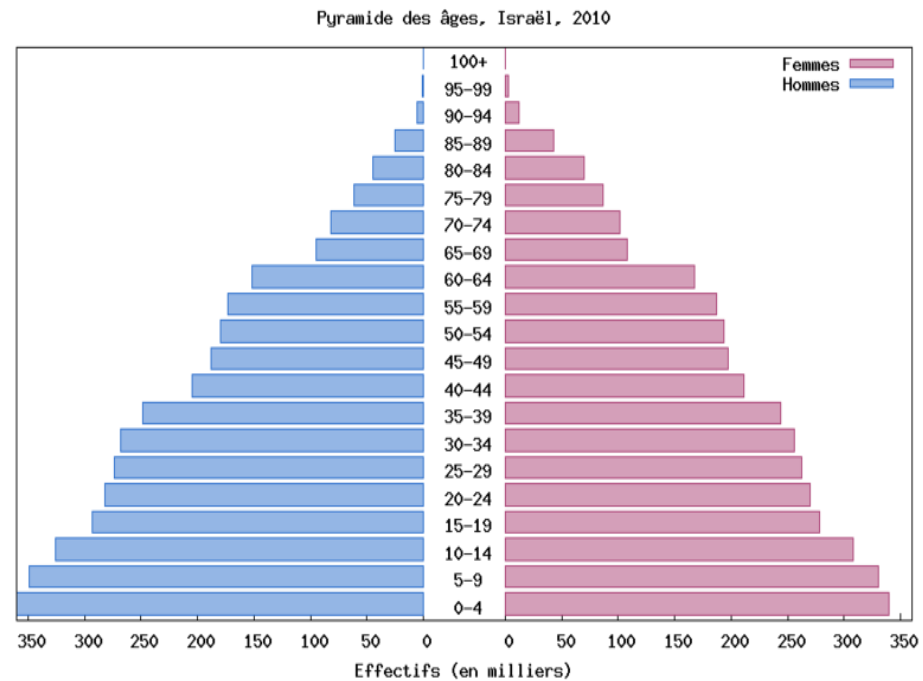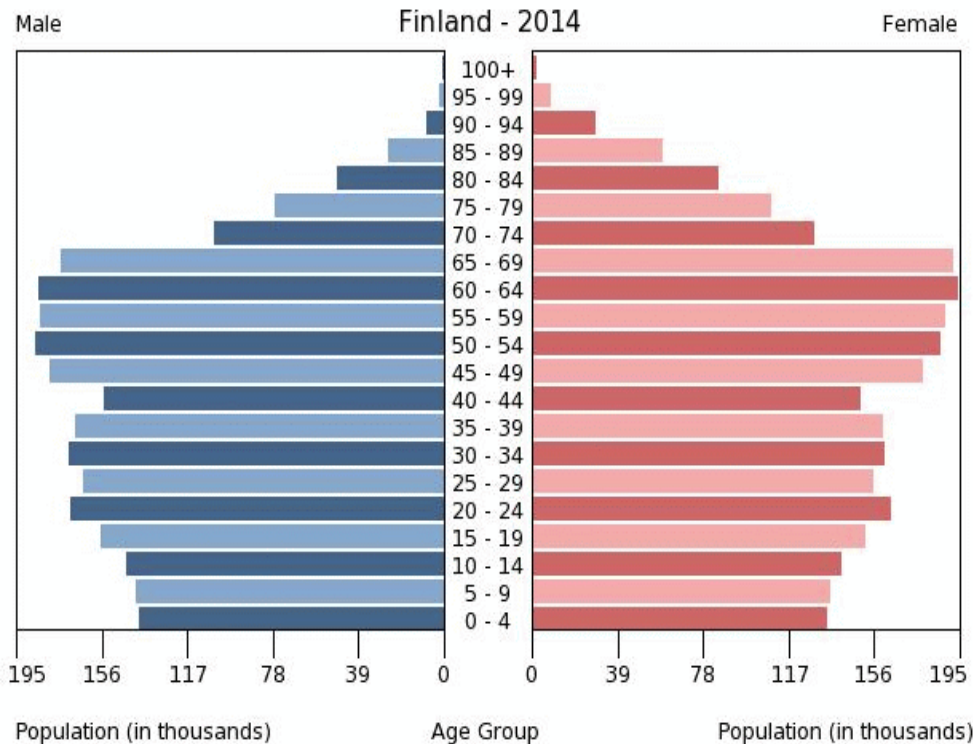

Pyramide des âges, Israël, 2010

Old 11%

Working 62%

Young 27%

Finland and Israel Demographics

What to do?

❖ **Encourage larger families**

❖ **Encourage Technological Entrepreneurship**

What is
Technological Entrepreneurship

There are many detailed and complex definitions

I have chosen the most simple one –

Establishment of a new technology venture

Technological Entrepreneurship – Key to World Peace and Prosperity

Why is Technological Entrepreneurship important for the well being of societies, countries and the world?

Building sustainable economy requires development of human ingenuity

How can we do that?

No corruption

Free market economy

Government policy and support

Good engineering and science education

Good basic education to all

But that may not be enough

Also needed is

Development of entrepreneurial spirit and knowledge

Born to be technological entrepreneurs?

❖ Some say that to become a successful entrepreneur one has to be "born with it"

❖ Not so.

❖ While it is true that home environment can affect ideas, mentality and self-efficacy, it is also true that proper teaching can direct attention to a worthy subject and good mentor can inspire enthusiastic followers.

Can we teach technological entrepreneurship?

Yes, we can and we should!

Who teaches entrepreneurship today?

Universities around the world

How?

Startups management in MBA programs.

Problem is - MBA startup managers do not usually open new high-tech startups.

So who opens startups?

It is the engineers, biologists, MDs, scientists and computer experts that start new High-Tech companies.

Who should teach technological entrepreneurship

❖ And so, in addition to teaching startup management it is a good idea to motivate and teach future entrepreneurs how to open successful startups

❖ Future entrepreneurs are students of engineering, biology, physics, chemistry, computer science MDs and related subjects.

❖ Universities should expose and motivate these students to consider opening hi-tech business of their own.
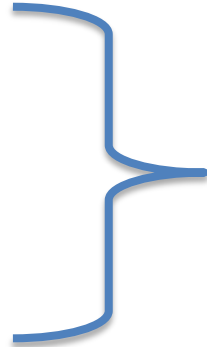
Whom and where should we teach

❖ Youth – in high schools

❖ Engineers
❖ Scientists   } in universities
❖ MDs

❖ Technicians – in vocational school

Technological Entrepreneurship – the Technion class

28 years ago I started a Technological Entrepreneurship class at the Technion. It is still running today.

How does the class work?

❖ Open to all Technion students

❖ 300-600 students in the class

❖ All lectures by invited speakers

➢ successful entrepreneurs

➢ new startup entrepreneurs

➢ professionals

An invited speaker-entrepreneur should provide tips, tell stories and give advice from his/her experience.

These entrepreneurs are role models to follow. If the audience can identify with the speaker, can believe that they can follow his or her footsteps and become success story, we have achieved our goal.

What can an experienced invited entrepreneur talk about?

❖ How he started
❖ Difficulties he faced and ways he overcame them
❖ What were the financial resources
❖ How he found proper partners
❖ How he found customers
❖ What is the company culture

Motivation

The motivation should be the startup itself. Not money.

Money is a byproduct of a successful business

Mistakes that lead to failure of startups

- ❖ Nonprofessional management by the technological entrepreneur
- ❖ Insufficient market survey and lack of market knowledge
- ❖ Wrong money sources
- ❖ Partnering with friends rather than professionals
- ❖ Ego driven entrepreneurship – "I know best"
- ❖ Bad contract among founders

Cultural considerations

Fear of failure

Our message is - **Failure - OK**

Start again!

Intrapreneurship

Early science education

Government role

❖ Incubators
❖ Partnership with VC funds
❖ Form a chief scientist office in every
   ministry
❖ Support industrial innovative R&D
   in startups
❖ Sign binational agreements and
   support binational funds
❖ Form and support instruction and
   advice centers for immerging startups.

Money

Not all money is the same

So, where should we go to seek funding for our startup

❖ Angels

❖ Strategic partners

❖ Bootstrapping

❖ VC funds

What money should <u>not</u> be used

❖ If you do not have deep pockets do not use your own money

❖ Do not take money from relatives or friends

VC funds - a good or bad source of funding?

❖ How does a venture capital fund work?

❖ What are the problems with VC funds

Exits

ısrael

2012 – $5.5 Billion

2013 – $7.6. Billion

2014 - $15 Billion

So, exit is good or bad?

START-UP NATION

addresses the trillion dollar question: How is it that Israel-- a country of 7.9 million, only 64 years old, surrounded by enemies, in a constant state of war since its founding, with no natural resources-- produces more start-up companies than large, peaceful, and stable nations like Japan, China, India, Korea, Canada and the UK?

Thank you