Technology Innovation and Entrepreneurship
Lessons learned in Israel

Dr. Yossi Dashti
yossi.dashti@gmail.com
WeChat: YossiDashti

Peking University,
School of Electronics Engineering & Computer Science

May 2017

Promoting
Technology Innovation & Entrepreneurship

Try new ways
Be different
Experiment
Be creative
Challenge
Discover
Find out
Venture
Explore
Dare

CREATE
VALUE

Technology Innovation & Entrepreneurship

Step 1

Create new technology based ideas (innovation)

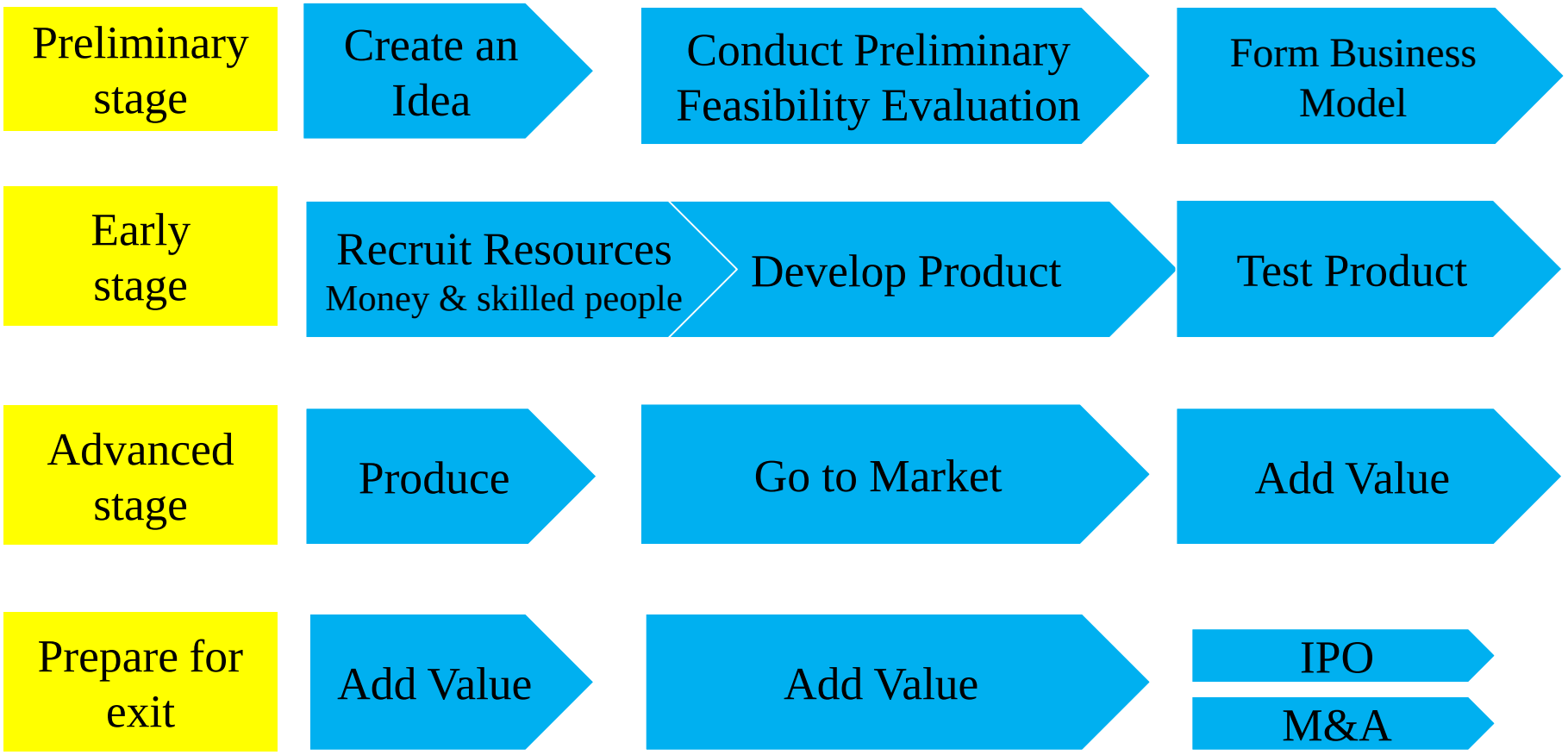
Step 2

Apply them to create value (Solve problems)

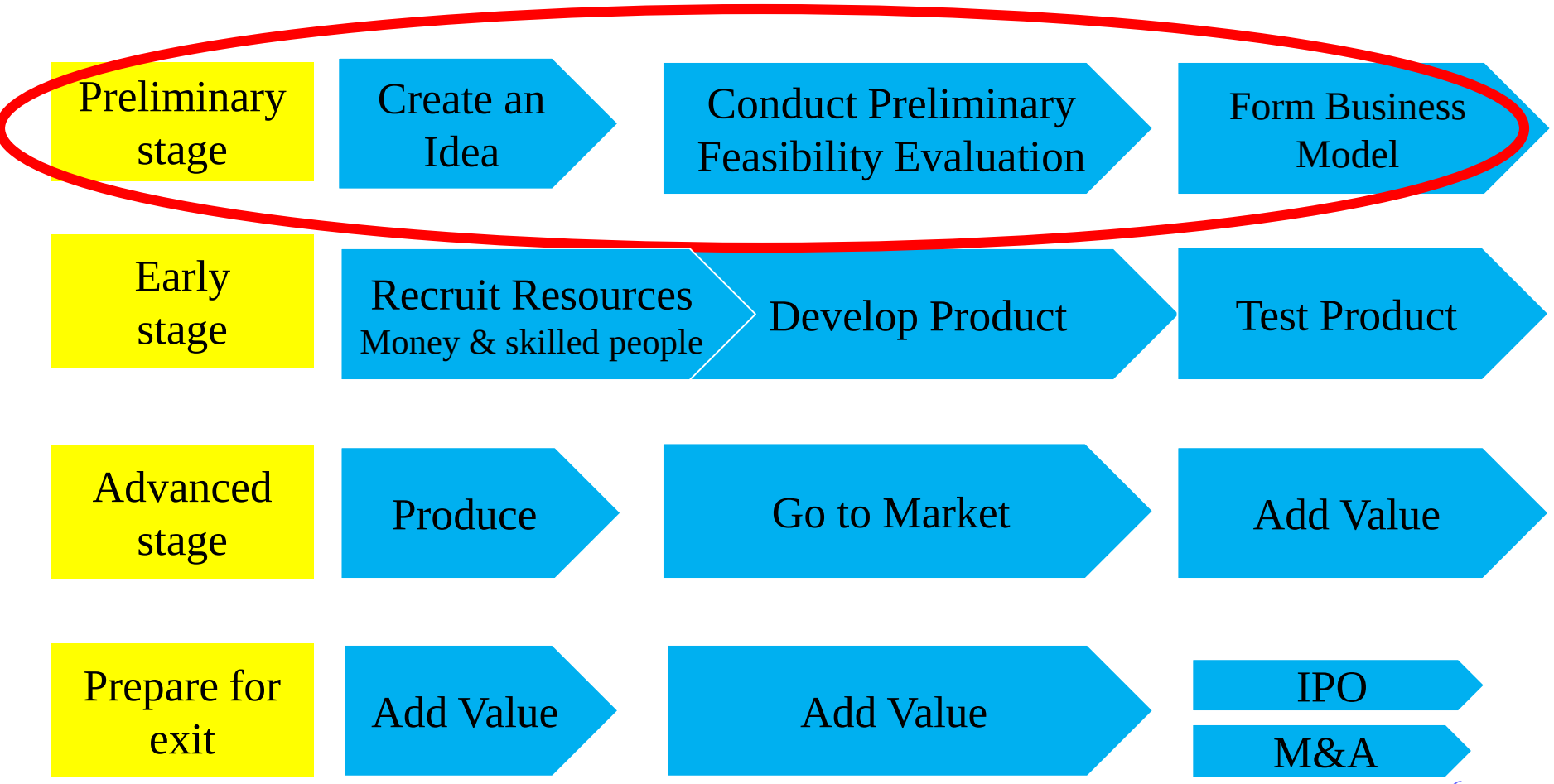
Technology Innovation & Entrepreneurship

Life Cycle of Startup Venture

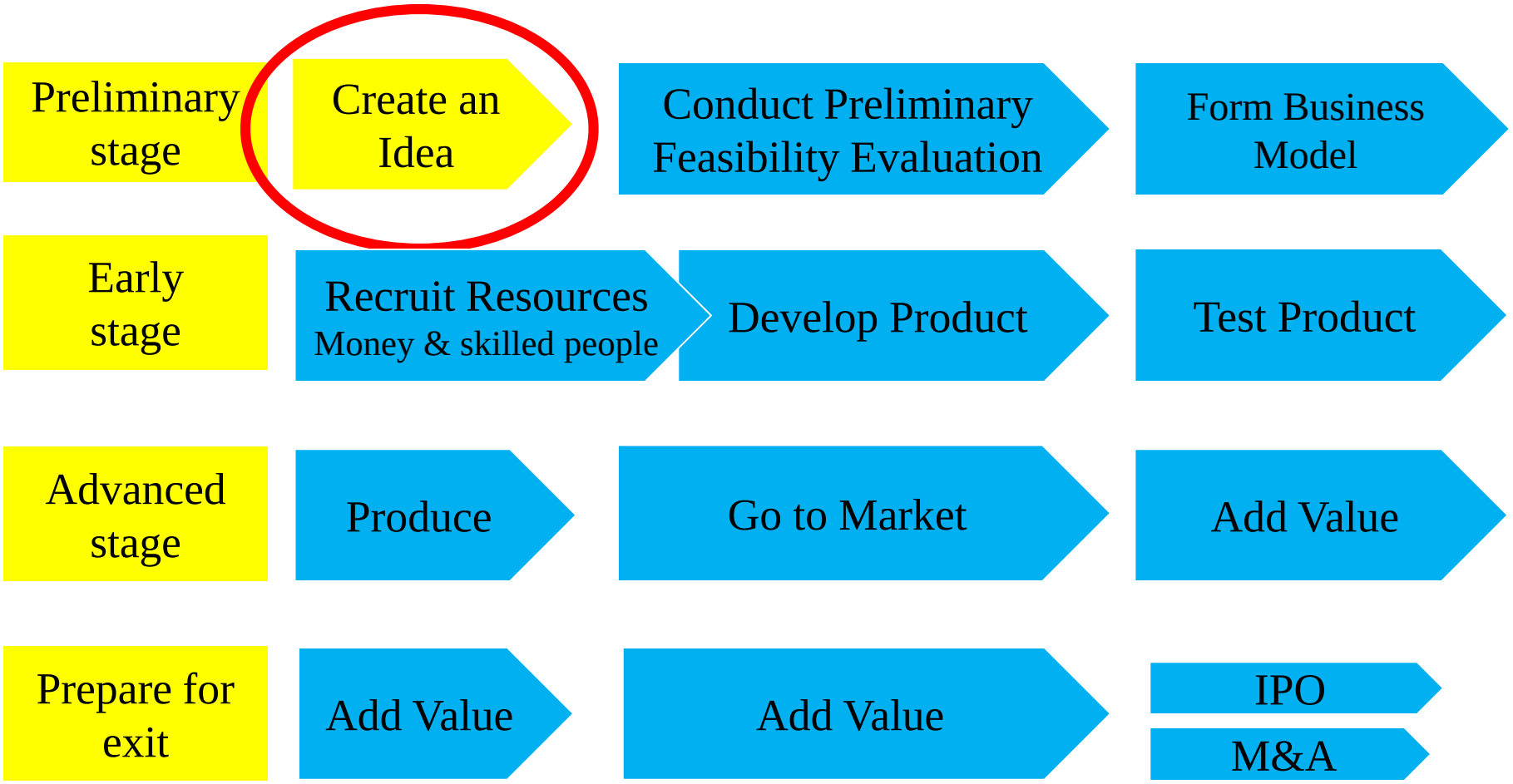
The life cycle of a Startup venture
"From Idea to Exit"



The life cycle of a Startup venture
"From Idea to Exit"



The life cycle of a Startup venture
"From Idea to Exit"



The life cycle of a Startup venture "From Idea to Exit"

Preliminary stage

Create an idea

Conduct Preliminary Feasibility Evaluation

Form Business Model

- Identify problem
- Identify opportunity
- Add value
- Cost reduction
- Improve quality of life
- Improve process
- Improve services
- Eliminate pain
- Provide valuable information
- Reduce/Eliminate risks
- Provide protection
- Improve safety
- Add joy

The life cycle of a Startup venture "From Idea to Exit"

Preliminary stage

Create an idea

Generating ideas - Forming concepts

- Identify problem
- Identify opportunity
- Add value
- Cost reduction
- Improve quality of life
- Improve process
- Improve services
- Eliminate pain
- Provide valuable information
- Reduce/Eliminate risks
- Provide protection
- Improve safety
- Add joy

Promoting Innovation – Think outside the box

How will the world
Be better with
your innovative idea
?

CREATE
VALUE

Innovative entrepreneurship & startup ventures

Characteristics of innovative ventures

Skilled workforce

Frequent changes
Fast adaptations

Collaboration

Competition

Uncertainty

Fast paced

High Risk

Innovative entrepreneurship & startup ventures

Characteristics of innovative ventures	Characteristics of successful entrepreneurs
Skilled workforce	Open to new ideas
Frequent changes	Loves challenges
Fast adaptations	Takes initiative
Collaboration	Visionary
Competition	Dreamer
Uncertainty	Creative
Fast paced	Networker
High Risk	Risk taker

Innovative entrepreneurship & startup ventures

Characteristics of innovative ventures	Characteristics of successful entrepreneurs	Startup Success factors
Skilled workforce	Open to new ideas	Management capabilities
Frequent changes	Loves challenges	Availability of capital
Fast adaptations	Takes initiative	Solid Infrastructure
Collaboration	Visionary	Skilled workforce
Competition	Dreamer	Service providers
Uncertainty	Creative	Strategic partners
Fast paced	Networker	Global networks
High Risk	Risk taker	Taking risks

Innovative entrepreneurship & startup ventures

Characteristics of innovative ventures	Characteristics of successful entrepreneurs	Startup Success factors
Skilled workforce	Open to new ideas	Management capabilities
Frequent changes	Loves challenges	Availability of capital
Fast adaptations	Takes initiative	Solid Infrastructure
Collaboration	Visionary	Skilled workforce
Competition	Dreamer	Service providers
Uncertainty	Creative	Strategic partners
Fast paced	Networker	Global networks
High Risk	**Risk taker**	**Taking risks**

What are the Characteristics and Challenges of Innovative Entrepreneurship

Uncertainty/unknown

IP – Intellectual Property

Protection of Intellectual Property

Innovation that creates new markets

Long duration of development period

Skilled employees – not easy to find/high cost

Dependency (on other technology) – design win

Requires a lot of money before it generates revenue

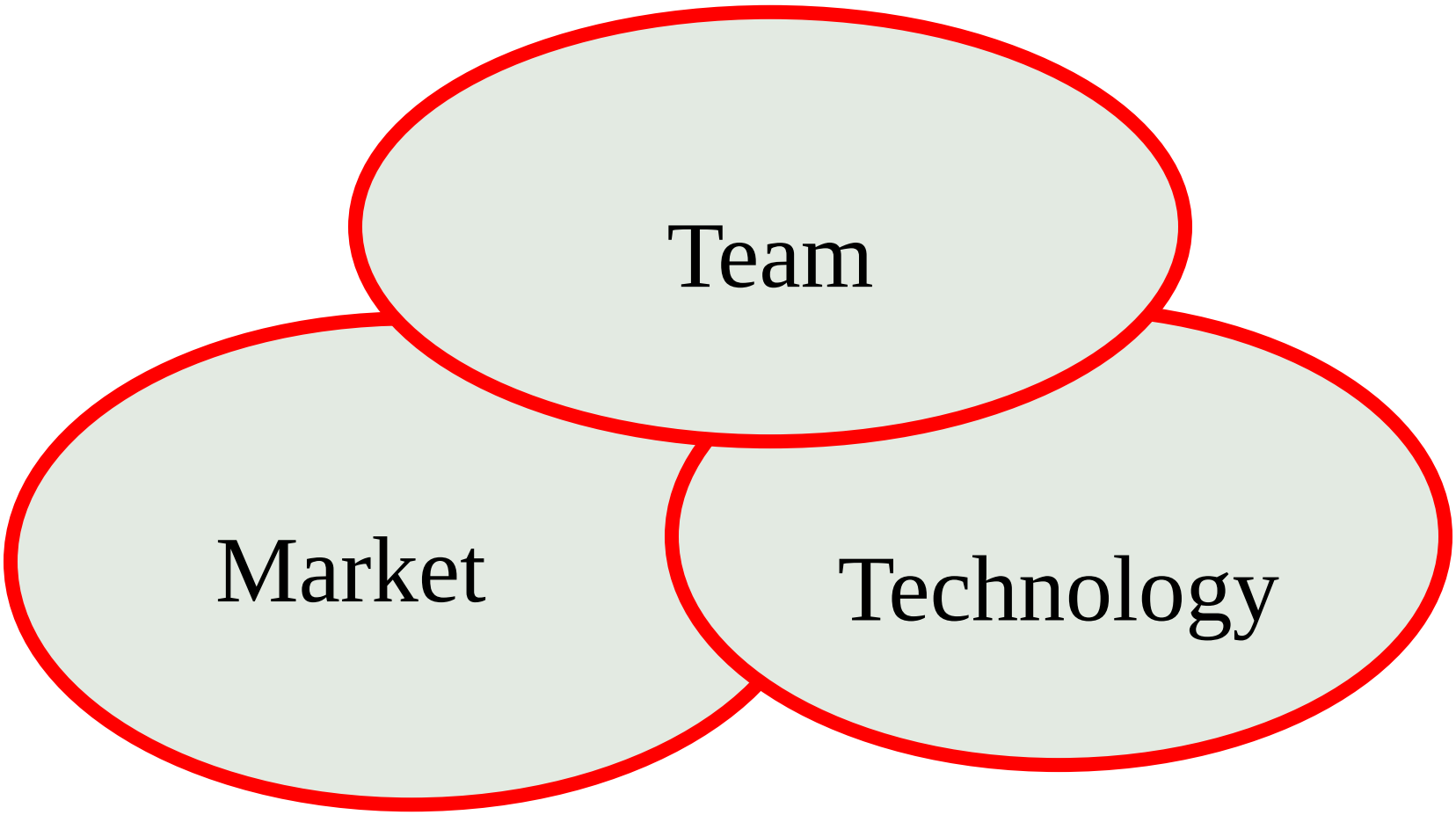
Starting a startup - Forming of Business

Long & Expensive development and marketing cycles

Require highly paid skilled workforce
Intellectual Property (IP) protection
Establish credibility

The need for investors
- Why cannot use ordinary banks to finance the startup?
  Equity for cash

Investors look for



Understanding the Characteristics and Challenges of Innovative Entrepreneurship

Examples from Silicon Valley/Israel

1,000

100

10

1

Understanding the Characteristics and Challenges of Innovative Entrepreneurship

Examples from Silicon Valley/Israel

1,000	Business plans submitted to VC investors
100	Considered and evaluated
10	Selected for investment/funded
1	Realize successful exit

Promoting Innovation

Try new ways

Be different

Experiment

Be creative

Challenge

Discover

Find out

Venture

Explore

Dare

Take risks

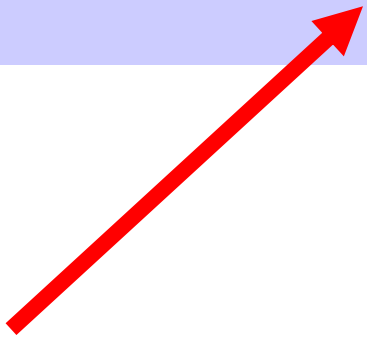
CREATE VALUE

Innovative entrepreneurship & startup ventures

Are we providing you a
safe environment to take risks?

Are we allowing the Freedom to Fail?

Technology Innovation and Entrepreneurship
Lessons learned in Israel



Innovation and Entrepreneurship
Lessons learned in Israel

Israel is one of the smallest countries in the world

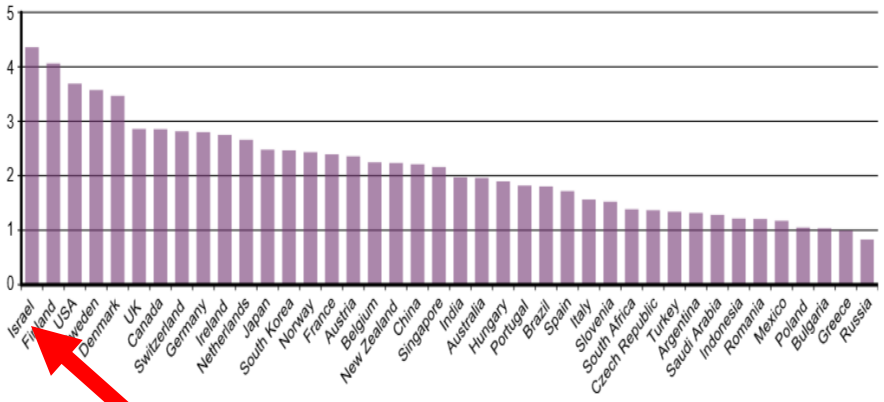
One of leading hub for innovation & entrepreneurship

Why Israel

Israel is ranked high in Innovation

Results and Analysis

Figure 2: Cleantech Countries Innovation Index



Israel leads the 2014 Global Cleantech Innovation Index, with Finland following closely behind. The characteristics of the top performers highlight that there is [illegible] single pathway for creating a cleantech innovative economy – countries vary in ho[illegible]they score in all the sub-factors and indicators (as you will find in the

Israel leads the 2014 Global Cleantech Innovation Index

Global Cleantech Innovation Index 2014 Factor Table

2014 Rank	Country	2014 Score	Inputs to Innovation	Outputs of Innovation	General Innovation Drivers	Cleantech-Specific Innovation Drivers	Evidence of Emerging Cleantech Innovation	Evidence of Commercialized Cleantech Innovation
1	Israel	4,34	2,87	5,81	2,86	2,88	8,92	2,70
2	Finland	[illegible]	2,90	5,18	2,83	2,97	7,59	2,77
3	USA	[illegible]	3,13	4,21	3,29	2,98	6,41	2,01
4	Sweden	3,5[illegible]	2,98	4,12	3,59	2,37	5,56	2,68
5	Denmark	3,45	[illegible]	3,76	3,15	3,12	3,23	4,29
6	UK	2,84	[illegible]	2,91	2,82	2,71	3,87	1,95
7	Canada	2,83	2,84	2,83	3,34	2,34	3,34	2,32
8	Switzerland	2,80	2,90	[illegible]	3,38	2,42	3,33	2,06
9	Germany	2,78	2,56	3,00	2,26	2,87	3,39	[illegible]
10	Ireland	2,73	2,34	3,12	[illegible]50	2,18	3,92	[illegible]
11	Netherlands	2,64	2,57	2,71	[illegible]	2,31	3,84	[illegible]
12	Japan	2,46	1,92	3,00	1,37	2,47	4,51	[illegible]
13	South Korea	2,45	2,40	2,49	3,00	[illegible]81	3,12	[illegible]
14	Norway	2,41	2,52	2,30	3,11	[illegible]	1,79	[illegible]
15	France	2,38	2,39	2,36	1,83	2,94	3,06	[illegible]
16	Austria	2,34	2,31	2,36	2,35	2,26	2,35	[illegible]
17	Belgium	2,23	2,34	2,11	2,04	2,65	[illegible]3	[illegible]
18	New Zealand	2,22	2,30	2,13	2,64	1,97	[illegible]	[illegible]
19	China	2,19	2,50	1,89	2,26	2,74	0,92	[illegible]
20	Singapore	2,14	2,47	1,82	2,52	2,41	1,21	[illegible]
21	India	1,95	1,92	1,98	1,39	2,44	2,10	[illegible]
22	Australia	1,94	2,52	1,36	2,54	2,49	1,12	[illegible]
23	Hungary	1,88	2,13	1,62	1,55	2,71	1,49	[illegible]
24	Portugal	1,80	2,00	1,61	1,40	2,60	0,85	[illegible]
25	Brazil	1,79	1,90	1,67	1,95	1,85	0,31	[illegible]
26	Spain	1,70	1,60	1,80	1,45	1,74	0,80	2,80
27	Italy	1,54	1,78	1,31	1,31	2,26	0,95	1,66
28	Slovenia	1,50	1,52	1,49	1,37	1,67	1,00	1,98
29	South Africa	1,37	1,63	1,11	1,43	1,82	0,26	1,96

Why Israel

Top 10 in 2017 Bloomberg Innovation Index

Israel - Technology Powerhouse -‘Start up Nation’

What is a Startup nation?

- Over 6,000 active innovative startup ventures
  - Top foreign traded companies in NASDAQ
  - World’s highest per capita R&D investment
  - Over 250 active VCs with $16B investment
  - Over 300 Multinational Corporations with R&D centers
  - Over $42B generated by M&A exit transactions

Innovation – The main growth engine

Validation by world's technology leaders acquisitions of Israeli startups (M&A)

Microsoft	**12**
IBM	**10**
Broadcom	**11**
Google	**4**
Intel	**9**
Cisco	**14**
Oracle	**4**
SAP	**4**
HP	**6**

Recent Mergers and Acquisitions (M&A) in Israel

Success Factors of Israel's Innovation & Entrepreneurship

- Set Policies - Promoted by national and regional policymakers
- Provided incentives (Grants, Tax, Education)
- Created conditions to attract Foreign VC investors
- Planned technology ecosystem clusters next to universities
- Attracted Multinational Corporations (Google, Intel, IBM)
- Established and supported technology incubators (government, private)
- Allocated funds to create local Venture Capitalist industry (Government)
- Availability of skilled and experienced workforce (education, military, global)
- Collaboration between Education-Defense-Industry-Entrepreneurs
- Culture of innovation - out of the box thinking

Success Factors of Israel's Innovation & Entrepreneurship

- Set Policies - Promoted by national and regional policymakers
- Provided incentives (Grants, Tax, Education)
- Created conditions to attract Foreign VC investors
- Planned technology ecosystem clusters
- Attracted Multinational C… …e, Intel, IBM)
- Established a… …ology incubators (government, private)
- A… …reate local Venture Capitalist industry (Government)
- …bility of skilled and experienced workforce (education, military, global)
- Collaboration between Education-Defense-Industry-Entrepreneurs
- Culture of innovation - Out of the box thinking

Conventional-Formal Success Factors

Non-conventional Success Factors

In order to understand Israel‘s culture

one must look at Israel’s history

Like China,
Israel's History goes back thousands of years

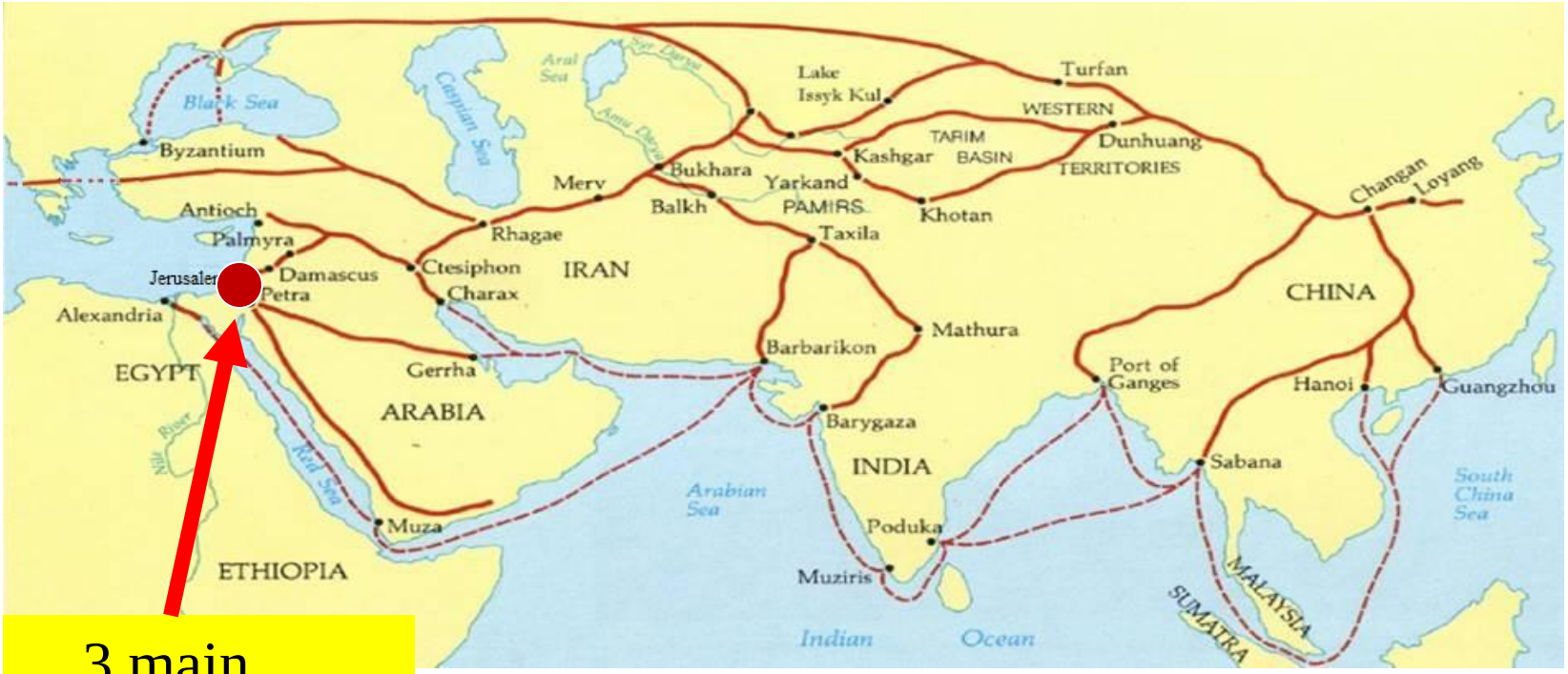
Ancient Israel Over 3,000 Years Old

Israel
Ancient kingdom
of the Jewish people

Established around 1025 BC
Located in Southwestern Asia
At the Eastern end of the Mediterranean

Israel – Strategic Junction

OLD WORLD MAP



3 main routes are funneled through Israel

Ancient Silk Road

of routes that connect East and West

xchange of goods, knowledge, innovation

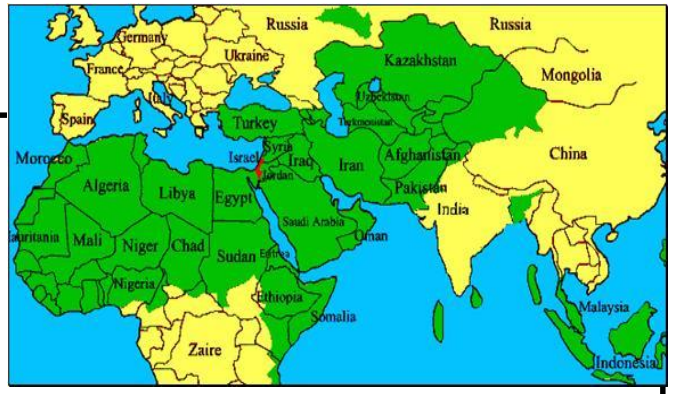
Ancient Israel – Strategic Junction

Desired spot by world's rulers – wars-occupation-destruction

The Jewish people were expelled into exile for about 2,000 years
Small communities around the world (including Shanghai/Harbin)

At the beginning of the 20th century/during & after World War II,
Jewish refugees moved to the land of Israel to reunite with
the old community and build homeland

Modern State of Israel – Established in 1948



Size 20,770 sq. kilometer
1948 Population: 0.5 million

Israel was established as a democracy
with strong roots to communism & socialism

Early Days – Focused on farming and agriculture
Collective farming communities, Kibbutzim, **kolkhoz** 集体农庄

Shifted to innovation – Today a technology powerhouse
Today's Jewish population is over 6 million
Immigrated from over 130 nations

Success Factors of Israel's Innovation & Entrepreneurship

- Set Policies - Promoted by national and regional policymakers
- Provided incentives (Grants, Tax, Education)
- Created conditions to attract Foreign VC investors
- Planned technology ecosystem clusters
- Attracted Multinational C… …e, Intel, IBM)
- Established a… …ology incubators (government, private)
- A… …reate local Venture Capitalist industry (Government)
- …bility of skilled and experienced workforce (education, military, global)
- Collaboration between Education-Defense-Industry-Entrepreneurs
- Culture of innovation - Out of the box thinking

Conventional-Formal Success Factors

Non-conventional Success Factors

Culture of innovation - Out of the box thinking

Non-conventional Success Factors

What are they?
How were they created?
Can they be learned and applied?

Non-conventional Success Factors

1

Diversity - The Law of Return
Creating a rich cultural diversity

2

Out of Necessity
"Only the paranoid survive"

3

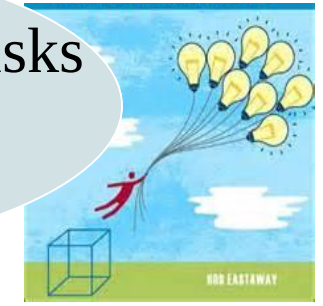
Military service (IDF)
The paradox of hierarchal order
"Zero Power Distance"

4

Local and global networks
"Six Degrees of Separation"

5

Safe environment to take risks
"Freedom to Fail"



Non-conventional Success Factors

1

Diversity - The Law of Return
Creating a rich cultural diversity

1 – Diversity - Law of Return

Right to return, Allows and supports immigration to Israel

Support package to immigrants:

- Housing
- Education
- Healthcare
- Employment

Immigrants came to Israel from over 130 nations
Creating a colorful rich cultural diversity

1 – Diversity Rich cultural diversity

Created Cultural diversity
– Wealth of perspectives and ideas

Created Global networks
– Simplifying the access to resources & markets around the world

Promoted “Born Global” entrepreneurs
– Helps Israeli startups to think globally

3 Factors that are crucial for Israel’s innovation & entrepreneurship

1 – Diversity Rich cultural diversity

In 2011, the Commander of the People's Liberation Army Navy, Admiral Wu Shengli, 吴胜利 made an official visit to Israel, meeting with Israeli Navy Commander, Rear Admiral Eli Marom.

Rear Admiral Eli Marom - Chinese descent
His grandfather, Chinese man who converted to Judaism, Mother was born in China
His parents moved from China to Israel in 1955

Non-conventional Success Factors

2

Out of Necessity

“Only the paranoid survive”

2 - Out of Necessity “Only the paranoid survive”

Israel – Early days

Difficult Conditions/No Water - Forced Israel to be creative

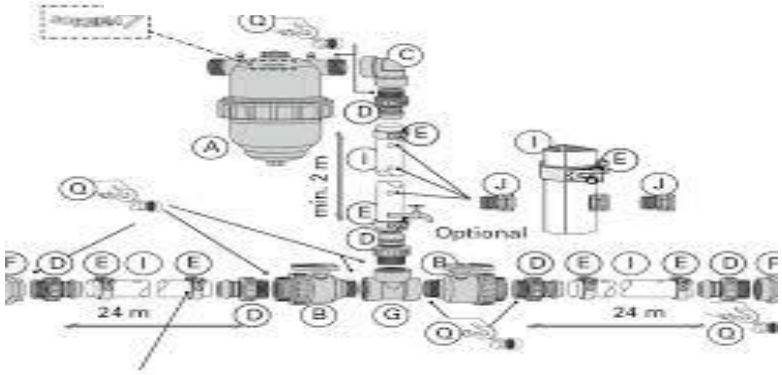
2 - Out of Necessity “Only the paranoid survive”

Difficult Conditions/No Water/No resources forced Israel to be creative

Israel – Early days

Out of necessity
Applied Technology
to overcome obstacles

NETAFIM™
耐 特 菲 姆



Water issue

Desalination - *removing salt from water*

The water crisis is over

Over the last 10 years, Israel began to build major desalination projects seaside. In 2013, the country declared that it had beaten the drought threat.

2 - Out of Necessity “Only the paranoid survive”

we are living in a tough neighborhood in Israel

2 - Out of Necessity “Only the paranoid survive”

Difficult conditions - forced Israel to be creative

Out of necessity
Applied Technology
to overcome threats

Apply existing technologies

Creating

Defense needs – Israel must stay very advanced
Missile technology – light & small
Missile guided camera

Apply existing technologies

Creating

Apply existing technologies

Creating >> Applying in other areas

PillCam

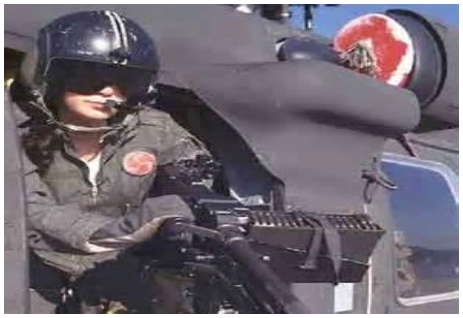
Healthcare and medical devices

Non-conventional Success Factors

3 Military service (IDF)
The paradox of hierarchal order
"Zero Power Distance"

3 - Mandatory military service-Israel Defense Force/IDF

All girls & boys are called for service
at age 18 for at least 24 months



Israeli Defense Force (IDF) - Mandatory military service

Sweat saves blood

Commitment/ Discipline
Management/Leadership
Overcome difficulties
Responsibility - Technology/Projects/People

Gain skills in relevant areas

Israeli Defense Force (IDF) – Structure

Regular - Mandatory service minimum 24 months

Permanent - Those who seek military career or special training

Reserve service – After completion of Regular and Permanent service

Veterans are enlisted and can be called for active duty

On reserve routine for about 20 years
Usually are called for one month each year
Routine training, ongoing security activities

Israeli Defense Force (IDF) - **Reserve Service**

Usually are called for one month each year
Routine training, ongoing security activities

Join other IDF units or assembled to
a unit for the purpose of specific activity

This structure can create a
blended commending hierarchy

Students-Teachers
Managers-Subordinates

====→ Zero Power Distance

Prof. Geert Hofstede – Six dimensions of national culture
How values in the workplace are influenced by culture

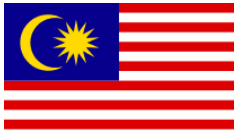
Power Distance Index (PDI) --- In lower PDI cultures:

People are relatively interdependent to the power holders

Managers and subordinates are less concerned with status
Flat management structure
Distribution of decision-making
Participation by all members

Subordinates willing to challenge their superiors
Speak up and give suggestions to supervisors

(**Hofstede,** Hofstede**, and** Minkov, **2010**)
Scores of power distance in 76 nations


Malaysia 100


United States

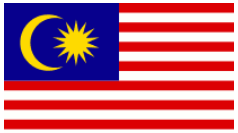

Netherland


Finland


Germany


Russia

(**Hofstede,** Hofstede**, and** Minkov, **2010**)
Scores of power distance in 76 nations



Malaysia 100

United States 40

Netherland 38

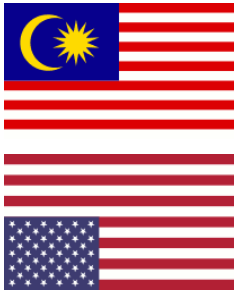
Finland 33

Germany 35

Russia 93

(**Hofstede,** Hofstede**, and** Minkov, **2010**)
Scores of power distance in 76 nations

13



Malaysia 100

United States 40

Netherland 38

Finland 33

Germany 35

Russia 93

Low Power Distance and Innovation

Flat management structure
Distribution of decision-making
Participation by all members

Subordinates willing to challenge their superiors
Speak up and give suggestions to supervisors

Impact on Innovation and Entrepreneurship

Non-conventional Success Factors

4

Local and global networks
“Six Degrees of Separation”

4

Local and global network “Six Degrees of Separation”

Stanford University

A group of researchers at Stanford University, stated:

"*The most crucial aspects of the Silicon Valley is its networks*"

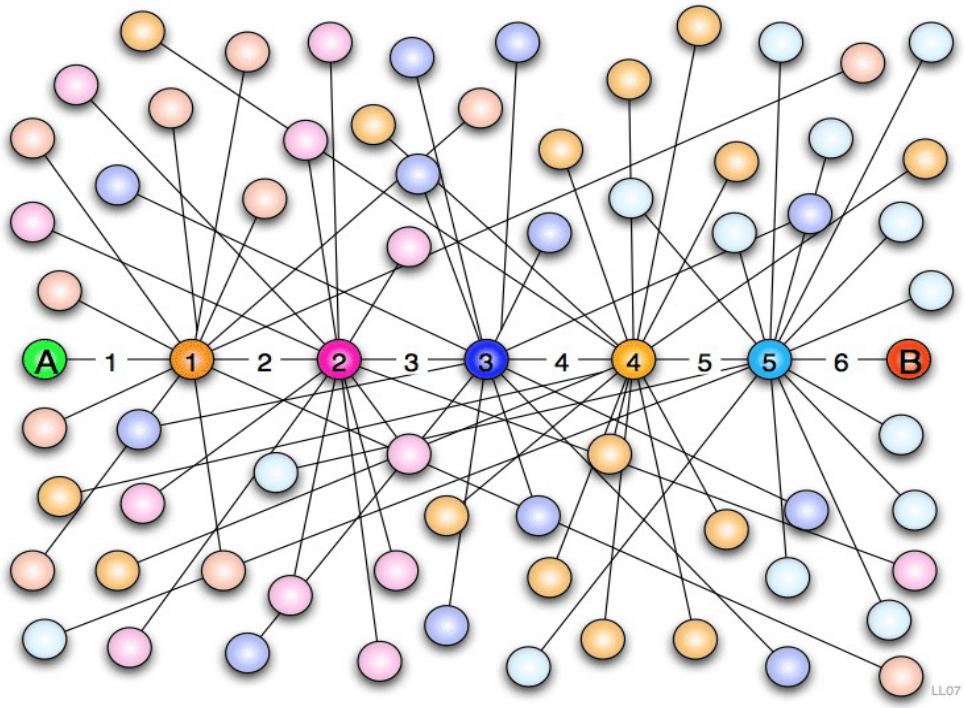
*Castilla, Hokyu, Granovetter, & Granovetter, (2000, p. 218)

Small world Phenomena
Six Degrees of Separation

Local and global network

Stanly Milgram (1967)

Any one person is connected to any other person through six or fewer relationships



160 חבילות לתושבים אקראיים באומהה ובנברסקה

ביקשו מאנשים לנסות לקרב את החבילה לאנשי היעד במסצוסט באופן הבא:

אם האדם שקיבל את החבילה מכיר את איש היעד באופן אישי, עליו לשלוח לו את החבילה ישירות,
אחרת, עליו לשלוח את החבילה לאדם שיש לו עימו היכרות אישית, ושלדעתו הוא יוכל לקרב את החבילה לאיש היעד

נמצא: vחבילות הגיעו ליעדן על ידי שישה אנשים או פחות שש דרגות הפרדה

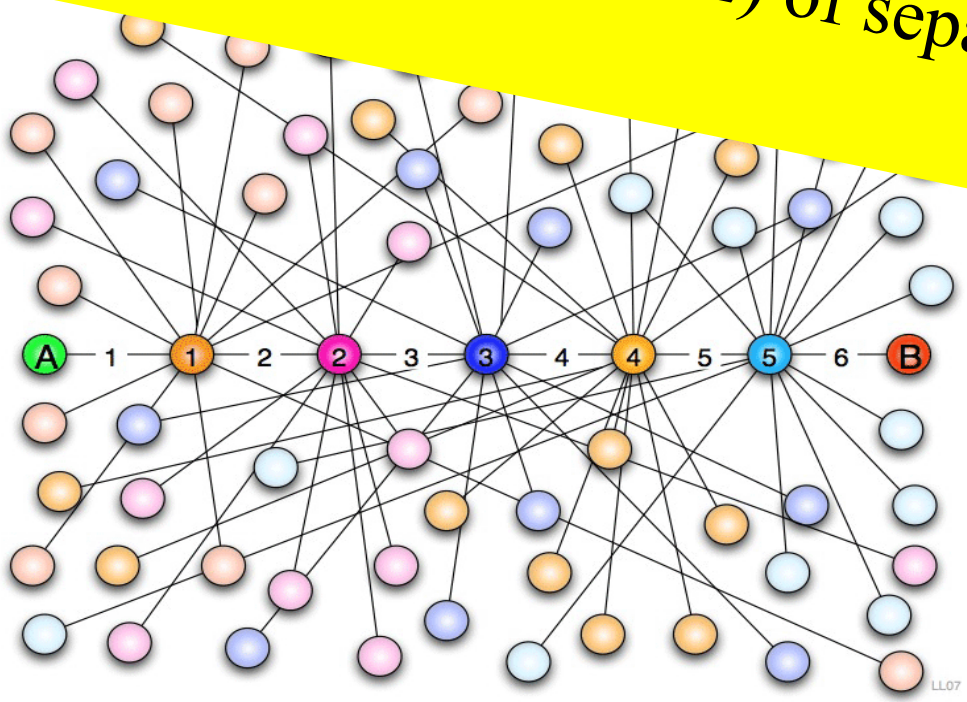
Small world Phenomena

Six Degrees of Separation

Stanly Milgram (1967)

In Israel
One Degree (maybe 2) of separation

...ted to any other perso...



160 חבילות לתושבים אקראיים ...

ביקשו מאנשים לנסות לקרב את החבילה לאנשי היעד במסצוסט באופן הבא:

אם האדם שקיבל את החבילה מכיר את איש היעד באופן אישי, עליו לשלוח לו את החבילה ישירות,
אחרת, עליו לשלוח את החבילה לאדם שיש לו עימו היכרות אישית, ושלדעתו הוא יוכל לקרב את החבילה לאיש היעד

נמצא: חבילות הגיעו ליעדן על ידי שישה אנשים או פחות ----- > שש דרגות הפרדה

Effective business network

Local networks – one degree of separation

- “Advantage of being small”
- “a friend brings a friend”/“a friend of a friend”

Global networks

- Sages: *"כל ישראל עֲרֵבִים זה לזה"*
  All Israel are responsible for one another

- Open doors of Jewish Communities around the world (Chabad, JCC)

Effective business network – Guanxi 关系

In Israel -- One degree of separation

Provides Access to Resources

Shares Insight

Supports

Jewish Guanxi
Local & Global Networks

In the picture, **Netanyahu** and the **Adelson**s are hosted by **Ivy** and Dr. **Yossi Dashti** of the California based Broadcom (Nasdaq: BRCM) to promote the Israel Philanthropic Foundations. SBN-042005

5

Safe environment to take risks
"Freedom to Fail"

How we provide a safe environment to take risks?

How is 'Freedom to Fail' embedded in the Israeli innovative and entrepreneurial culture?

Freedom to Fail

Google

20% work rule

Allocate time to do things outside of job description; explore, learn, try

Embedded in society & large organizations

– Embedded in Jewish tradition

Jewish culture promotes it for thousands of years

The Sabbath - Mandatory day off (Saturday)

Freedom to Fail

Post implementation reviews

A routine practice at the IDF

- Inquiry and finding faults
- What went right and what went wrong
- Individuals report on their challenges & mistakes
- Not for blaming but rather for learning

Embedded in best practice

Freedom to Fail

Jewish Learning Methods
Arguments

Arguing as a method of learning

- Students are encouraged to present opposite views
- Children/students/subordinates

  Don’t hesitate to express disagreements

Freedom to Fail

Jewish Learning Methods

- *Rabbi Hanina Bar Hama*
  - lived in Jerusalem 2100 years ago

*"**I have learned** from my teachers, and*
***I have learned a lot** from my colleagues, but*
***I have learned the most from my students**"*

Lesson # 1	Diversity - Build well rounded teams
Lesson # 2	Identify real problems - provide value
	Focus on solutions with value proposition
Lesson # 3	Create MUST do attitude
	Commitment – “out of necessity”
Lesson # 4	Build/maintain effective networks
Lesson # 5	Provide safe environment to take risks

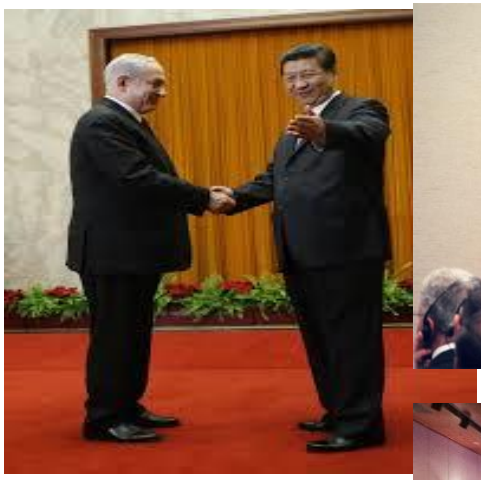
One of the largest & one of the smallest

Two ancient Civilizations,
once considered hubs of innovation

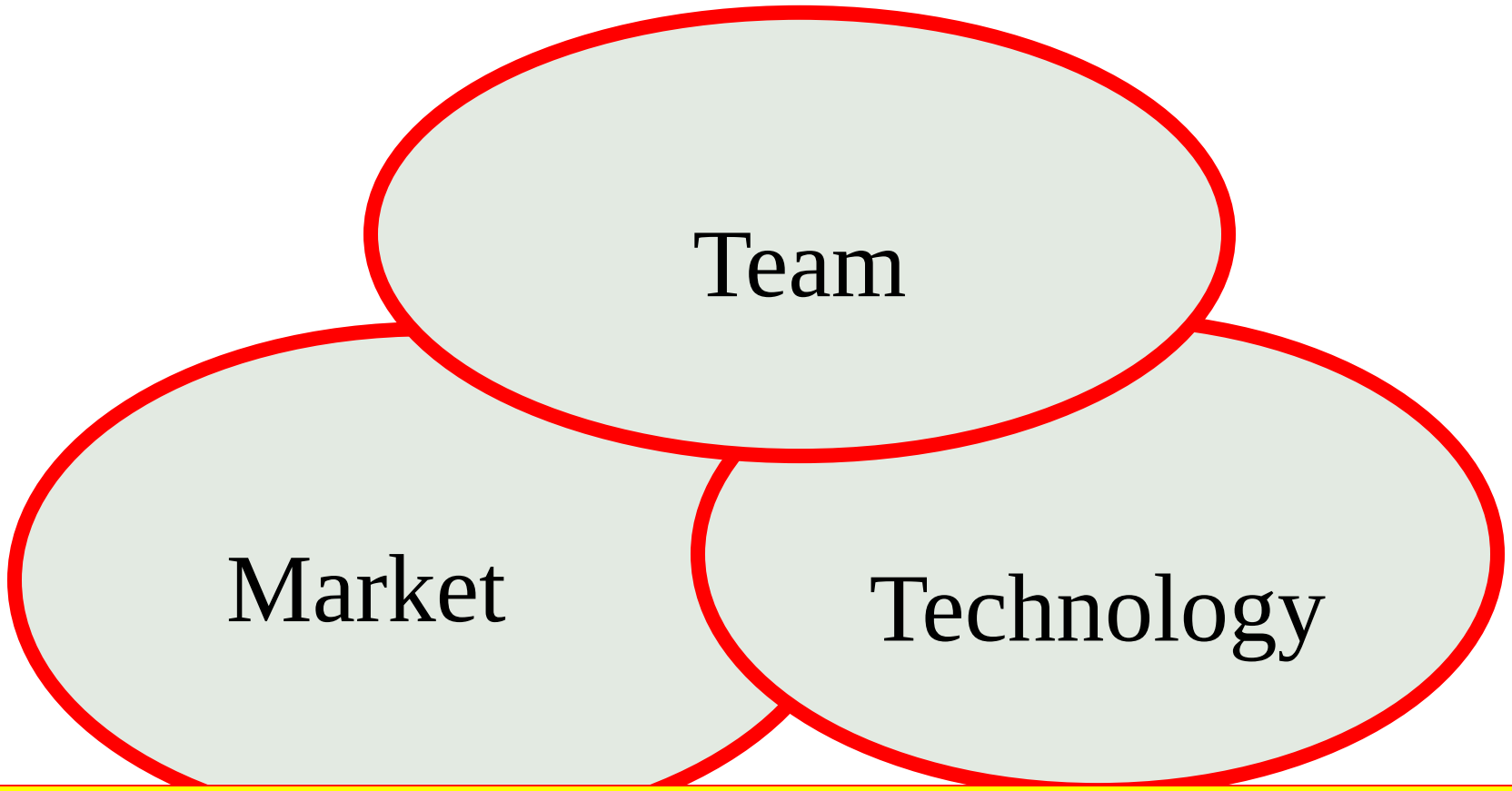
Many shared values:	China	Israel
History	√	√
Family values	√	√
Next generation	√	√
Value education	√	√
Global networks	√	√
Harmony/Tikun Olam	√	√
Ambitious for success	√	√

Why Israel?

China-Israel Increasing collaboration



Investors look for



See you on Monday

Technology Innovation and Entrepreneurship
Lessons learned

Yossi Dashti
yossi.dashti@gmail.com
WeChat: YossiDashti