

FORUM FOR INNOVATION MANAGEMENT

FIM

Innovation & Entrepreneurship Education

Professor Dan Shechtman, Nobel Laureate in Chemistry

Tuesday 6 december 2011
Nedre Manilla

Tor Bonnier, FIM:

Hello and welcome to Forum for Innovation Management and to our very exciting seminar on the topic “Innovation & Entrepreneurship education”. Forum for Innovation Management or FIM as we like to call was established in 1999 as an activity within the Karl-Adam Bonnier Foundation. During the last 10 years we have arranged more than 60 seminars, published several books and research papers on the topic of innovation policymaking.

FIM is a private, independent and voluntary initiative with a mission to enable cross-pollination of ideas on current and future policies and legislations that will ensure Sweden to have a healthy entrepreneurial climate and a national competitive innovation strategy.

This seminar could easily be seen as our “10 year anniversary seminar” with today's roster of distinguished guests, panel and keynote speakers. As they represent a long FIM history as well as future of FIM.

Let me explain. In one of our first seminars we arranged in 2001, Anders Flodström spoke on the topic, “*who shall make money on the idea*”. Anders then representing the Royal Institute of Technology, KTH, and the academic perspective of the triple helix model, set the tone of what would become an important part of FIM unique character: Intellectual boxing matches in a relaxed, challenging and honest debate environment.

If we turn the clock forward to 2006, we came in close contact with Karin Markides, then Vice President of Vinnova.

Karin – you have actually never been a speaker at our seminars, but been a frequent guest. I have had the pleasure to have collaborated with you in FIM's steering committee in so you are also a big part of the FIM family!

In august 2007, Maud Olofsson spoke as our Minister of Enterprise on the topic, “*Innovation & employment – What should the government do?*” Only a half year in the job you showed a strong supporter of improving the Swedish entrepreneurship climate.

Martin Schuurmans participation here tonight represent as well our current strategy to offer an “outside inside” perspective on the Swedish innovation system.

By inviting leading European innovation system representatives and policymakers we intend to better transfer knowledge between Sweden and EU policymakers but also understand Sweden's challenges and opportunities in a European innovation context.

Now to our keynote speaker Dan Shechtman. First we must thank the Nobel committee for making the right choice!

I also want to express my greatest gratitude to the Israeli ambassador Benny Dagan and to your team who have worked so hard in creating a window of opportunity for us to listen and to debate with Dan tonight.

As Europe is well under way in rolling out Innovation Union 2020, it is important for Sweden to also get input and insights on how other countries around the world are working with the

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challenges of global competitiveness. Israel is certainly a country that has had an impressive development in the last 50 years and I think there are some interesting learnings that we can discuss upon how they might fit in in our own context. I truly look forward in hearing Dan speak on the subject better entrepreneurship education. One of the great challenges in the Swedish innovation system.

With that in mind, I would now like to introduce this evening's moderator, Mikolaj Norek – FIM's own Forum Manager.

Mikolaj has devoted his last two years working in an academic environment with one mission – to offering students education, training and inspiration in applied entrepreneurship at Stockholm School of Entrepreneurship, SSES.

I cannot think of a better person tonight to formally introduce this evening's speakers, ensure we are asking the right questions and keep us on our tight schedule.

With that I welcome everyone here tonight to Manilla, my grandfather's private home and today the center of the Bonnier family and the home of the Bonnier book publishing business that has flourished during the last 200 years – as sign of perseverance and entrepreneurship.

Dan Schechtman,

Professor of Materials Science at Technion, Nobelprize Laureate in Chemistry 2011.

This is really an inspiring moment and I see this meeting as only second to the real ceremony on the Nobel Day. And I'm not joking. I really mean it.

In order to know what to do now we have to look to the future and see where we are going. I have a dim view of the future so let me outline it in two minutes and then see what we can do about it.

You see in the future, and I don't want to mention the number of years natural resources and especially the really critical ones such as oil will seize, and there will not be enough to produce electricity. And I talk about electricity because electricity will drive our world more than it is now because cars will also be electrical. No one will burn gasoline to move from one place to another.

So, there will be a problem of energy and problem of other natural resources. We use the world's natural resources in an accelerating phase now and prices will go up and up and up until we cannot buy them anymore.

What will happen? Many countries in the world now thrive and thriving may not be like Sweden, it can be like countries in Africa but they do better now because they sell more of their natural resources. But one day there will be no more to sell. It's a gradual process – but it will happen.

Two things that I see: One is that people in these countries will fight each other, vicious wars, local tribes. And the other phenomena that will happen is that waves of refugees will stream to the north. To the well-to-do countries. Is it imaginary? It has already started.

Who will survive? Those people who can make products and sell them. And in order to do that you need to educate winners, to educate our people now to become entrepreneurs. Those countries with entrepreneurs in my mind will survive. They will make things. They will provide better things to their people. They will be able to whether to stand in the wake of such disasters.

How do you teach entrepreneurship? Let me tell you a little bit about my experience. When I was a student in engineering, I studied engineering at Technion, 50 years ago. Actually in 2012 it will be 50 years. I'm bluffing one year. When I was a student I thought something was missing. They taught me how to design, how to make and the spirit was you will be such a good student – when you graduate everybody wants to hire you. And I thought this is not enough. When you grow up and you will be an excellent engineer you should open a company and first employ

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yourself and then maybe two people and then five and then a hundred and provide jobs for very many people, business how you build the country. And Israel was building, still is.

When I became a member of the faculty at Technion, my own university, then I went to the Department of Industriell Engineering, and I asked the person in charge: Why don't you teach the students what is the patent, how do you register a company, what is marketing, what is market surveys? – so the people will know at least the language of entrepreneurship. He said: Danny – we have enough. Just go away.

Then I started to climb the ladder of the academic degrees and when I became a full professor I said: OK, now I can dedicate much more time to the community. I thought I would open a class of entrepreneurship. It's called the technological entrepreneurship, this is the 26th year that I teach this class, year after year.

I designed this class to work as follows: who is the mind type of entrepreneurship. I bring invited speakers according to some skills. First I bring the people who made it in the Israeli environment – I never invited anybody from abroad to my students. I wanted them to open up start-ups in Israel. But not what they did do inherited, their factories and wealth – the people who started from scratch. I wanted the students to identify with them to say: I can make it to! To create an entrepreneurship atmosphere, this is very important to create: a more entrepreneurship environment in the country.

So, I invited this people and to my great surprise: everybody from the Israeli industriell community said: yes sir, when can I come. We called them on the phone – you can do it in Sweden. In a small country everybody knows everybody and people are more open here. I don't think in large countries you can do that.

Then I bring people who are struggling now, who opened start-ups with five people, ten maybe. And we listened to the problems. The problems are different. Why does we not have enough money? Another one can not get the right people. Another one didn't do the right market survey in terms of in Taiwan they sell his product cheap and so on – they have different problems. They describe them themselves. We don't bluff the students: most start-up fail. That's OK. If you fail don't give up! Start again. Now you are much more experienced, you have paid a lot for your experience. You are experienced as a entrepreneur now for another start-up. Never give up.

After all this sort of spiritual lectures, I bring the professionals. I bring the patent officer of the country to talk about patent. I bring a lawyer who tell my students how to register a company. Should you register a company? What kind of company? What does it mean a limited company, what is it? I bring a person who owns a large company of market survey to talk about how important it is to do a market survey on the first stage. Then I bring somebody who talks about marketing. Everything is directed to the international market. Local market is very small in Israel so as in Sweden.

We talk about international markets from day one. It is understood that a start-up should market its products for abroad. There is no local market.

What happened in the last 25 years is that follows: Let me give you a few examples. In the first year I wanted somebody from a venture capital fund to talk about venture capital. It was only one capital fund, I admit the "venture" because it was not a venture capital fund. They didn't venture, they invest in something that is very solid already. It was called the "VC fund".

In the second year I was looking for another company, but there was still one. In the third year still one. The manager told me; Now I talked for two years, take my son he will talk about it. Well, this changed dramatically during the years. Last years there was a lot of venture capital money in the country. Let me tell you something: I don't bring this people to talk in my class anymore. The reason is that from day one they think about exit: "when can we exit?" The investors want their money back in five years. This it not how you build a country. You want the

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companies to grow in the country. You don't want any Chinese company to buy, you don't want any American company to buy – you want it to grow in the country.

I tell my students: "you build a company for generations, not for five years. You create a spirit in the country". For 25 years ago we didn't have the terminology, now everybody talks about entrepreneurship. I remember that after the class I went to the students cafeteria, eating with them but alone facing the window – the students were behind me talking about entrepreneurship – and I could hear the spirit. "I can make it, my uncle will invest" and so on.

There is a book "Israel the start-up nation". I would like to believe it is, I would like to believe that I had some influence on this. I never could measure it. But the environment in the last 25 years changed dramatically.

Let me tell you a word about venture capital because the Israeli government was involved in that. This government did one wise move by sharing the risk of venture capital funds with venture capital funds. They said: OK we put into the venture capital funds, mutual funds, the government takes some risk. And when the government took risk it created a wave of response from venture capital funds that were established to provide a fuel to re-entrepreneurize the country. It was a wise move. Successful.

In the last five minutes I have, I would like to illustrate a few more things about it. There is a difference between Israeli students and other students, let's say in Europe. He is at least three years older. Why so? Because he has mandatory, military service. In the military he became a man, and a woman became adult. This is very important. When you come for the first time to my university the students have very little parties. They don't drink. There is no alcohol on campus, not six percent beers, not twelve percent beers such as in some countries in this area. The students come to learn, to study, they are serious. Many of them are married already, some have children. They are adults – they don't emerge from high school going to parties. Its not the case in Israel.

This is number one. Number two: Modern military has to do with computers and high-tech. The highest high-tech is in the military nowadays. They emerge from this units knowing a lot about very sophisticated engineering and when they come to study engineering they know a lot, sometimes much better practically than the professors. And they know what they want. They are motivated, they have a direction to go and they do that.

You know recently they found gas in the Mediteeranian near the shores of Israel. Large quantities of gas which is great. But to develop such a field it takes a lot money. If you educate, for every large gas field or oil field, thousand engineers the return on investment will be by far higher than from the gas. It mean that we are going to sell raw products – that's bad news – we don't want to sell raw products, commodities. We want to sell the final products made from that. And when I say "we" I'm talking about Israel and I'm talking about Sweden.

We should have policies on how to manage natural resources. In Sweden you have iron ores but you sell some steel – that's the way to do it. So, we all should do that.

Let me finish by a small story. I start a new project now, I told you about a project that I started 25 years ago. I start a new project, it started a month ago. I do it with the mayor of my town Haifa. He will sponsor it. We are going to teach science to kindergarten. I want to do two things: to teach them quantities, describe and explain and make them think in logical terms. No nonsense, no hanky-panky. Reasonable terms, everything should be understand in reason, logic. What do science mean to kindergarten-children? I want them to know how to measure length. This is ten and a half centimeter. I want them to do the following experiment: to plant seed and measure the height of the plant every day, or every week and be able to measure it and make a point in the line how it grows. All the children can do that. Never underestimate the power of the mind of the children. I want them to measure weight, practically measure weight. I want them to measure temperature. This is cold water, 15 degrees, this is warm water, 40 degrees, this is hot

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water, 80 degrees. I want them to measure volume, one liter, two liters. The coca-cola bottle – what does it mean that it is 1.5 liter? I don't want to go into more detail but this is clear: quantitative measurements and logical thinking for kindergarten-children, hopefully they will carry it to the school – we will continue from that point.

The last one is a funny one. I want every school in Israel to have a board and the sign of the board will say, I will translate it likely: nonsense. Children in schools should read newspapers and look for the nonsense and paste it there with their names. Quantitative nonsens. I went to a meeting in Tel Aviv and the taxi cab took me – I read the newspaper of the driver – its called Maharif. In the last page there is a very interesting news: after the tsunami in Fukushima in the center area of Japan a lot of the debris were taken into the ocean and now twenty tons of this debris are making their ways to west California. Interesting? But the problem is, its not twenty tons – its twenty million tons. What's the difference? This is the quality of some newspapers. If I could improve a bit the quality of the reporters and the mind of the students that's a great achievement.

Maud Olofsson

Sweden's former Minister for Enterprise and Energy, currently advisor to US Secretary of State Hillary Clinton on female entrepreneurship.

Let me start with my private life. I've been the Minister for Enterprise and Energy for five years and I will go back to my free life now. The first I did was to start up a business. Because for me starting up a business is about freedom, freedom of taking different decisions. And I gonna do that together with my husband because he just quit from his job. So 2011 is just a big change in our life. He was quite tired of his job so I just said "tell the employer that you don't want to work anymore so we have started new business together.

Some reflections. First of all: thank you very much for your introduction and for your work. Your thinking about the natural resources and what is gonna happen I totally agree. As a Minister of Energy I have seen all this. Because raw materials, energy that is on the top of the agenda all over the world. That is a very tuff discussion and I think those countries that are innovating and entrepreneurial, they will be the winners for sure.

To get an entrepreneurial spirit and innovating spirit in the country, its easy when you are a small country like Sweden and Israel because there are so hard competition. We have seen in historical times, because of that, we became a very strong exporting country. But still, if I look at Sweden, I think its important to see that you need to start much earlier to create an innovating and entrepreneurial mindset.

I have been out meeting students from pre-school up to universities. I usually ask them every time: how many of you will start up your own business? And never more than 20 percent, never. If you look at the audience – if you have just 20 percent starting up business young people will not get a job. I tell them that because if you want to create new jobs you have to start up business.

What we have done here is that we have now a legislation where we tell the schools: that you should teach entrepreneurial mindset at school. That is the first time in history in Sweden we have done so. And that's wonderful and I think that is the first start. I also think that what we are doing in our schools now with "Ung Företagsamhet" young entrepreneurship – we have this universities where students can start with business and start their own business and do it with the help from teachers and others and do their own business. I think that is also a way of creating mindset and give trust to those students: they can do it. Many of this students start their own business after schooltime.

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The problem as I see it is the teachers. Because they don't know that much about entrepreneurship. They are not skilled in that, they don't have the background. Of course there are some that have an entrepreneurial spirit but not that many. So we have to change the whole school system. We have to teach the school teachers to be entrepreneurial or to be better to connect the private sector to the school. And I can complain about the private sector being so far away from the school system. They say: we want students and we want them to be well educated but we don't care how they do it. I'm hard now when I say it but I think if we gonna be successful on the lower levels in the schools but also on the higher levels private sector has to be closed to the school.

And you told about your students, you told about all the people who are coming to your university. I think that is excellent. Because the student have to understand and be connected to the private sector. And the private sector has to be there and understand the students and be inspired by the students. What I think we has to do is to connect more of the privat sector and the education system.

Let me give some good examples at least. Countries that can also connect new areas that are not normally connected to each other that can give strive innovation. I'm talking about Umeå of course and the artistic campus of Umeå. What they are doing in Umeå now is fantastic. They connect different areas like the school of design and modern art, the school of architectures and they create incubators, together with the business sector, to make an innovating system where the private sector is involved within the university and research area.

I think that is crucial for the future to try to create new innovative environment for the students, for the private sector and also connect different areas that are not connected normally. The good thing here is that they invite the business sector to be there. "Come here, give us ideas, maybe we can solve your problems." They are within the university, within the artistic campus of Umeå. I think that's one good example. They are of course inspired of the Aalto University of Finland. We find some interesting environment now are created around the world and we have to look at that.

Mikolaj Norek:

You are really connected to both political leadership and entrepreneurship and this is something and I think, that goes through your entire political career. But there are voices in the innovation system that are missing this focus and leadership in entrepreneurship from the entire government. Is this focus really missing? And if so, why?

Maud Olofsson:

Well, I can speak free now. The answer is yes. Because I think other people they don't understand why, why do we need more entrepreneurs?

Mikolaj Norek:

How can they not understand that?

Maud Olofsson:

It is easy because a lot of people thinks the money comes from heaven. Comes from tax payers, they don't know that tax payers get their money from entrepreneurs. If you look at Sweden, it is a country with a lot of big businesses and we had built big trust on them but if you look at the business sector in Sweden nearly none of the companies have been growing to big businesses since the 1970s. For that reason its necessary to build a new society with more small businesses and more innovative businesses. I can tell you one thing that's why I lost the election. I was not that successful because the Swedish people does not understand it. An election winner is: we

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have to put more money on the health care system, more money to the school system, more money to the welfare system – you get a lot of voters for that. But if you go to the election campaign and say: I want to cut the taxes for the small businesses – not even the small companies vote for that!

Mikolaj Norek:

How can we possibly change that?

Maud Olofsson:

We have to have a discussion about how do we pay for the welfare system? How is the welfare system connected to entrepreneurship? We have to explain that better. I also think that we need no more role model. If you look at most of the entrepreneurs today they earn less money than an employee in many companies. I think you have to show the real life of entrepreneurship and you also need to encourage role models. I started a programme with women ambassadors because I wanted to show the role models, They have been out in many schools and just told the students about their story, how they started their business, what they do, how proud they are, why they do it and so on and that have been very successful. We have exported the idea to the rest of Europe and 20 countries have women ambassadors programmes. I'm gonna tell Hilary Clinton about this because I think this a very good way of showing women in business and give role models to others that want to start business. That could also be a way of doing it for students because "if she can do it – I can do it".

Mikolaj Norek:

Very much the same that is true for Maud Olofsson is also the case for you, Anders Flodström – an introduction is not really needed. Still, you are professor in physics at the Royal Institute of Technology, KTH, an institution that you led as rector from 1999 until 2007, when you became University Chancellor of Sweden and also Head of the Swedish National Agency for Higher Education. You are today the EIT Vice Chairman and member of the EIT Secretary Committee.

Anders Flodström

Former University Chancellor and Head of the Swedish National Agency for Higher Education:

If I'm allowed to be a bit personal too I would talk about the ten most interesting, most creative years of my life. Those started actually in 1980 and ended in 1990. 1980 I started a company based on some ideas I've gained in research or you could call plastics in a very innovative way. This thing turned out to be all of a technology you could use for CD-records to get the reflecting layer to stay.

1985 I had a company that turned over a 50 million kronor and I had 30 people employed. I worked together with Atlas Copco, a major Swedish company. They left me at 1990, I went bankrupt, so I'm sort of the only Swedish University chancellor in history that went bankrupt.

Getting back to Dan's talk, I'm sort of excited by your talk because you in a very obvious way introduced education and meeting with the students and you sort of have two sides of the topics, introduced them into the latest sort of knowledge but also to use that knowledge to create new things. And from my part I think you are exactly right we need to create an other value system where education takes a quite other role at the university than it does today. In my value system research can not go on just to create value for it self for ignoring the research frontier and create Nobel Prize Laureates based on this. Research must also create the value system where research is used for innovation creativity and creating other values, and we have to be able to have those

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together. And that's the first change that has to happen. The second change that many more like you use this educational tool for this. Use for transforming it to the students and get this to become a culture. This is the final words I think what we are doing in this country and also when I look at Europe we treaten entrepreneurship as a project, we create entrepreneurs and we have a project and after the project the entrepreneurship dies. What we need is to get this to become a culture. There are parts in Sweden where this culture exist, and parts in Israel where this culture exists also. But how do we get this culture to become a country-culture? That is a big issue. I think the only way we can do it is that what you did, through education. We can't do it by research because it is a sort of project in itself but education is most encompassing the society in quite another way.

As you said, it has to start in schools. It has to use the children and their creativity and keep that. It has to continue to keep up the creativity in the education at the universities. Let me end with, not the fun but I thought it was a fun anecdote. I have a four year old grand children. Just to mention how children look upon life and I think we should look upon life. He just got his fourth birthday and he has a chair so he can sit straight because in Sweden you care about safety so until four they have to sit backwards. The first thing when we were going on to drive he told me: "Oh grandfather it's a stop sign – I never seen it before". I think this is the spirit we should have, we should look for the stop signs in our life because that will give this creativity.

Dan Schechtman:

There was one thing I want to mention. Basic science is really important. I don't consider myself as a basic scientist. My discovery, and other discoveries, came out as applied research. But basic science important. Let me take you back just one minute. Let me take you back to Einstein. We wouldn't have GPS today without Einstein. What can you do with the Relative Theory? A lot, a lot. And sometimes it takes many years to find out what you do with the discovery in basic science and I could give you a large number of examples. Basic science finds it way into applications eventually. It becomes crucial. But I agree with everything else.

Mikolaj Norek:

Karin Markides, you are since 2006 President and CEO of Chalmers University of Technology and you are also a professor of analytical chemistry. I think it was this reason why it wasn't so difficult to persuade you to come. You hold a guest professorship at Stanford and you are a member of the Royal Swedish Academy of Science. And since 2009 you also hold a chair at CSR, The Conference of European Schools for advanced Engineering, Education and Research.

Karin Markides

President of Chalmers University of Technology:

I also want to start to thank you for this inspired parts that you have covered a lot of things outside of the traditional entrepreneurial thinking. I also like to start out with some personell reflections and I spend quite lot of my life in a country that is a kind of headstart and there I was very much involved with start-ups. This was in the 80s. What I want to say is the shock I had when I came back to Sweden after some 15 years abroad. The shock was picked up by you actually: how can it be so that when you start a company you have to start to think about exit, and write in your business plan how you should exit. It killed my interest. I thought we have to do something about it – this is not right. So I am so pleased that you said that we should not really inspire our young with people that have this attitude.

My reflection here is about attitudes. I think attitude is something we need to bring into this and think about. If you think, maybe attitude economy is a way that we can look at this to see

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how we can make people more part and inspired and engaged in what is driving them to be part of society today. In that way I think we should divide also the ones that really help the ones that are inspired and driven by entrepreneurship and the ones that are inspired and driven by developing knowledge and service. Everything is fine but you have to think what your drive is. You shouldn't think that to be an entrepreneur you have to also bring in what to develop in your entrepreneurial spirit – that doesn't have to come together. When you are a scientist you don't also have to become an entrepreneur. You have to understand the attitudes and you have to really be able to develop your own driving forces and skills. I was happy when I came to the west coast of Sweden. There is an attitude and of course, as Anders said, there are many places in Sweden where we have this but particular strong I would say in Gothenburg, for many reasons.

The closeness to the business, academy to business, has been close for many hundred years. Maybe that is part of the reason why we have this situation today. There is a development of venture creation programmes. As a master student you can actually go and develop yourself in class as a true entrepreneur. The ideas that you are going to develop are not your ideas – they are picked up by skilled people. You have really good mentors. You have also the resources, you will be trained to really understand and develop your entrepreneurial skills. To really make a connection to the region and the strength in the region that this endeavor can grow. And not be moved away immediately when you get to a certain point.

I think, to build a value in the regional, the national, the international context I think you have to understand that it comes together and of course we all know that the local and the global context is really connected together. But as you alluded to also the national level is also important. Culture is important.

Today when we are connecting to the resources that we have in the world we have to really combine, I believe, not only the economical, ecological and social aspects of sustainability – we also have to add culture aspects. If we bring all this driving forces together we can connect it to and also build attitude and start in kindergarten I believe as well.

We have all this possibilities in Sweden, We have this understanding. We have many universities that have really set this forward and worked with venture creation programmes. We can benchmark and help each other. I believe also that we should do that *in* Sweden, because the culture in Sweden is important to really understand how to grow this in Sweden. To make use that we have multinational companies that could be the first customers to bring these ideas out in the world immediately. We really have all this things. And you also gave one example what the government can do. So, where are these funds? Where are these kind of matching funds? Why don't we have them here? I also know that you in Israel have taken advantage of people coming from international background to bring them into incubators and work there. I think these examples also should be something that we should utilize. We have a lot of influence of people come to Sweden taking this master courses. I talked to one this morning, a young student that had just finished master classes. He came from an Asian country. He is entrepreneurial driven and he said to me: "please let me stay here and build something but I have to go back home next month because I don't have the right to stay here. Because I don't get employed by a company which make it possible for me to stay – I want to build my own company in Sweden and they don't allow me to do that.

Mikolaj Norek:

Martin Schuurmans, you are the founding chairman of the EIT Governing Board and former Executive Vice President of Philips Medical Systems. You also co-funded the Sino-Dutch Medical School. I also understood you lived two years in China and were the dean for the school. You are today the chairman of the European Institute of Innovation & Technology.

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Martin Schuurmans

Founding chairman of the European Institute of Innovation & Technology (EIT) Governing Board:

I want to start on the dim future that Dan Schechtman gave to us. But since I'm a bit short-sighted I want to draw to the near future and I want to give you a little bit of a picture. And the picture builds on spending maybe the 15 years by mainly in China and the United States.

When nothing changes quickly now in Europe we will be almost sure that China will rule the economic rates of the world. And we will have a situation in which Europe and United States could become "me-two" economies. "Me-too" is OK if you are self-contained like US. But "me-too" if you are superdivided like Europe seems like an awful perspective. Now, why is this true? Let me first explain that a little bit.

Most of you will realize most products today are completely assembled not only in China but in the great Asia Pacific. But even worse because recent study of Harvard business illustrate that most western nations will not even be capable building an iPad together.

So here's an issue: When China leads the world on better technology, on clean technology – they actually had ride out the only first and fourth generation of nuclear reactor. They lead to the IP version 6, technology for Internet. And actually in business entrepreneurship I have seldom seen people that are so bloody aggressive and move forward so very quickly.

A Chinese friend of mine and I built a small school, I believe with one thousand students, it's part of a university. I wish I had listened earlier to Dan because I could have used some of your experience on entrepreneurship in school. We did it very naively in 2005 when I was the dean. I said "look, we gonna set some money aside and those students who wants to start business will get some money". And we had enough established entrepreneurs around the school. Some of them had failed, others that had been successful. They could help the students.

And today I could report this was an enormous success because about 20 percent of the graduates in the bachelor leaved the school basically as an entrepreneur and had their own business, never make it to the masters, never make it to the PhD anymore. There are about 40 percent that goes international and of these 40 percent also have ends up being entrepreneur.

So, it is a way of doing it. But there is still one point that hasn't been brought up. Why is it so much easier in China and United States than it seems to be here? Is it also, in some sense, more easy in Israel?

I believe we Europeans are extremely good in personal organisation of blame. If you fail, and I think you know this story very much, you will be blamed as a person. This is our culture, this is the way we have grown up. It started in kindergarten. We never can do, we always see limitations and when something goes wrong its your personal responsibility. If you go to United States, if you go to Israel more mature people entering the universities after strong forced military training – its a completely different situation. Its the same for United States, certainly for the West Coast. East Coast there is a slightly difference I would say.

So, why in China? Because these people don't want to loose face. First they don't want to loose face, so they are more determined than I ever have seen people when it comes to build business. But secondly, this is something that I probably learned during the years now, the Chinese people have their ways at a certain moment in time to blame the fault of the system. They have become extremely good at that. Why are they professional in that? Because they can not fault to loose their face. So, they move. This was one aspect that I wanted to mention so entrepreneurship and innovation for me is no more a discussion it is a must.

But I like to add a second aspect and maybe that leads to a bit of controversy here on the table, but I like to do it nevertheless. This is about: "what sort of innovation actually do we have?". Of course for years we have had situations where you come from science, you do an

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invention, in this field Europe is bloody good, and then from there you proceed to hopefully in no business. And that domain is bloody poor.

But the reality if you look today at innovation it is copy-driven innovation, design-driven innovation, user-driven innovation, social media-driven innovation, personal effort-driven innovation – what have you?

Most of the successful technology-related companies in the last past of the years, and some of them of course also come from Israel very much, built on existing technology but half brought together the people in the right network of business angels, franchise capital, education – many students are actually quite sensitive to this and like to try and do it, and research but not necessarily research in the basic sense. Also, and very much of this is the case in Israel I believe, applied research. I think that when they bring together this knowledge triangle, business, education and research is a corner stone and just to assure you: President Obama a year ago decided on a new plan for innovation in this country. Remember what he said: "We will outeducate and outinnovate the world" – that was a little of what he said. He has made sure that the National Science Foundation in the United States now has significant funds to make sure that in the leading universities in the country students are being forced to build their own companies during the studies. A certain amount of money comes from the NSF. And so he is forcing the knitting of the network education, technology and business. I think that is an essential part of the step forward we have to make.

The public discussion

Jan Edling, Vinnova:

We are talking today about entrepreneurship. But sometimes I think there is a little romanticism about the entrepreneurship thing. Maud said that there is a connection between entrepreneurship and welfare. That's right maybe but there is also connection between growing companies, not just the starting of companies. Growing companies, creating employment because its also the employment that give the taxes to the state and gives you the money to the welfare, to research and development and so on.

Today I see that we have difficulties in Europe, In Sweden, in United States to do that. To much resources are going to other things than the things we need to do that should make us better than we are today. I think also its necessary that the entrepreneurial companies that are created today also learn to grow. They must grow in order to create things on a global market not just home for the man we have here in our own state. Its necessary for small companies to grow, to join each other and maybe go together to finance very expensive innovation projects, to be able to finance export projects that are going out in the world with what they are doing. And also try to grow larger all the time.

I think in Sweden and in Europe as a whole, I suppose also America, much of the efforts of the western world today is about how to make our companies more innovative, more global and more expanding. We can see today Siemens, Volvo and other companies that we've been used to delivering employment to us. They are not here anymore, they have their mission in China, in Brazil. Let me take an example, Ericsson, has today 20 percent of their employment here, Electrolux has three percent – we try to rely on them to much. But we have to rely on building new companies.

Elisabeth Shemer:

I'm a medical doctor. I studied at the Technion, so I'm experienced studying both in Sweden and in Israel. My experience that I want to share is – we are talking of being an entrepreneur – but I would like to raise "what does an entrepreneur work with?". You work with ideas. And that is

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what you have in this culture that is really academics. It is that you consequently ask why – its very irritating at the beginning. But its very important. When I came back to Sweden – that is what we lack here and that is what we need to bring into the academic world, into the schools and teach the kids this tradition that the Israelis are super at.

Camilla Modéer:

Just a short question. Thank you for your inspiring lecture on the class and entrepreneurship. Which is the most important do you think to teach your students? Facts and tools or the attitude?

Dan Schechtman:

There are a few: number 1: never give up, number 2: become an expert in your field. Let me do the market survey and learn the economics of your product, even before you start. You have to know that, you have to know where you are going. Number 3: Find the right partners. The larger the number of partners in the start-up the larger is the success ratio. You need one that is a technology expert, you need one that is a good manager and you need one that knows finances. At least.

Let me tell you: scientists may know the technology but they can not manage usually and they never know the finances. So, you need a team. Research shows that the larger the team the better is the success ratio. We tell them all that. I teach now 300 students every second semester. Before it was 600, so by now I've had about 10 000 graduates from my class.

Karin Markides:

I think this what you are talking about is very important and everybody can understand this what is really need to create a business. What do you think about venture creation programmes, when you decide that you are also driven to become an entrepreneur and really make that as your own career. Do you have that type of programmes as well? Do you see the difference?

Dan Schechtman:

I can't tell you about all the programmes, we have quite a few in the country. But I agree with you that bringing the entrepreneurship spirit to everybody is exactly what we need. This I why I think government should be involved. We as individuals can only do so much but governments can do a lot. And in Israel they do. There is a lot of money available for start-ups in Israel, also from government. There is an interesting programme in the United States which is an idea good for rich countries: they will give entrepreneurs a certain amount of money and they don't have to return it to the government in any shape of fund. The money is given as a present. its very competitive, its called SBIR, Small Business Innovation Research. And every funding agency has to put aside a certain percentage of its funds for SBIR:s. I believe this is a better way than paying back to the government.

Karin Markides:

Here we have a company, Fourier Transform, they want 20 percent in return.

Anders Flodström:

I think we are missing the target a little. Just to strength Martins argumentation, if you look at the Forbes 500 list of the 500 biggest, most innovative companies within biotechnology since 1975 there are 2 percent that comes from Europe, 21 percent from US and the rest comes from South East Asia. If you are gonna sit and see ten years ago and we do if we just focus on this as individual project exercises – I mean this is actually going to be a culture change. I mean the entrepreneurship has to become part of the culture, otherwise we will not succeeding this.

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Martin Schuurmans:

A very small remark. I agree with you of course because we work very close together. But the thing is: you have to put the money where your mouth is. And when that sinks in we'll not doing it. That's my point.

Peter Stein:

I'm a Swedish economist and very honoured to be here and listen to this excellent speakers. I have a question to professor Shechtman: Three years ago I was asked by the Confederation of the Swedish Industries to look into how comes that Israel has such a dynamic private venture capital market and why can Israel attract more international venture capital than almost any country except the United States and China. One thing that transpired when I read what both the Israeli and international scholar said was that one strength of the Israeli system was that the Israeli state from the beginning once entered that market formulated an explicit exit strategy signalling to private international investors "we don't know how to run companies, its not so much the money that we are interested in but import knowledge and once Israel has that we'll exit and leave it to the market to handle this". Could you please elaborate on this?

Mikolaj Norek:

Do you see a difference how the Israeli education system thinks about entrepreneurship and education compared to what you see here?

Peter Stein:

One thing is that in Israel my impression was that they have much better cooperation between business and education, for example if Israeli students at universities have some ideas you will find Israeli or foreign companies coming to the universities setting up their laboratory set. You can use all facilities free and if we like your idea we will commercialise it and it will benefit us it will benefit you as well.

Mikolaj Norek:

I will ask Jesper Ericsson, how is your impression of the young entrepreneur scene at our universities?

Jesper Ericsson:

I'm PhD on the Karolinska Institute and very much, I think, a child of the Swedish entrepreneurial education. First of my question is "how do you make persons physical need, after the courses we are hundred students – how do you make them being rubbed together so that they interact, they share their skills, they actually start building companies together after the courses is being done" – that is actually what I miss in Stockholm that you don't have a lot of happening, every day action. How do people meet so that I could share my skills and also meet the other business people? That is the question.

Dan Schechtman:

This is the point: when you create an environment in the country, many speakers talked about it, when you create a culture communication comes natural. This is what we are working on, creating a culture. Israelis communicate a lot, people talk a lot to each other. There are a lot of communication there.

Everybody knows we are a friendly society so you can build an entrepreneurial endeavor within the factories. There is a lot impropreneurship in the country. Large companies, three

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engineers will come to the manager and say: "we have an idea, let us develop it." Very often he will say "OK, fine. I will fund it for a year, show me what you can do." And then after a year they come with a product. Now there are two options: One option is that the company say "OK, we will do the product, we will give you now ten technicians and 20 other people and then we create a team and we have a new product."

Another option is that the company say: "We are not interested". In this case, sometimes, the engineers says: "would you mind give us the product and we will try?" and the company will say: "Yes, go ahead, do it".

The boss is not really a boss in the country. This also a sense on a very early stage. In the military, we serve in the reserve every year, and the boss could be a footsoldier and the employee can be the commander. It happens all the time!

So, the hirarchies are mixed, we don't really have hirarchies in the country. Anybody is like anybody else. You can go to the high boss and talk to him as a friend. Its part of the culture. I don't know how it is in Sweden. I know in the far eastern world a boss is a boss. You can never talk to him. This is just the opposite in our country.

Jesper Ericsson asked about "creative cafeés" in Israel and China. Dan Schechtman answered: "There's a lot of communication between people in Israel. Everybody knows everybody. I assume that in Sweden its similar in a way but I don't really know. Its a small country."

Martin Schuurmans:

Maybe on China I can answer your question. There are two things that are really useful: One is the café, we had a café at school, and it was a very important meeting point. The most important meeting point at Chinese universities is the dormitory where you have eight folks sleeping in one room. Most of the ideas that I have heard typically come out from that type of conversation.

Anders Flodström:

But if you look at the EIT educational programme and if you go to an European example and look at the Greenhouse within the climate kick which is located at Imperial College. In that Greenhouse forget of bringing fancy companies and let them put up their labels. We collect all the students there around, different ideas that could be sort of new product a way of changing how we mitigate and adapt the climate.

We see ideas coming out like a rucksack with some solar cells – that's the simplest one. We also see ideas that now have been materialised, the reserve power solar cells at hospitals and the computer facilities are used when there is not an emergency and they adding something like a nuclear station to Europe.

When you have a 300 students there the faculty also come. What you have to do in the Swedish educational system is to have some sort of a quality system that tells you that the students really become more entrepreneurial creative – not just doing the things by chance.

Maud Olofsson:

We talk a lot of students on a high level and I want to go back to the schools. If you start early create an entrepreneurial mindset you also gain from it when it comes to the universities. I think the question you raised about all the students say "why". I thing that's a crucial question because if you go to the schools today and look at how the educational system works – the kids that are creating the most problems are those who have the entrepreneurial spirit. Because they ask "why". They don't want to be introduced to different rules, they don't want to have regulations because they are free thinkers. Those are the problem kids at schools and that is why I think its so important for the schools to have a legislation about: you have to teach them creativity,

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entrepreneurship as well as other ways be employed or something. I think if you have this entrepreneurial spirit you also create a risk spirit. Because if you not have this entrepreneurial spirit you are not prepared to take risks. Its a safe life.

Mikolaj Norek:

How do you teach risk?

Maud Olofsson:

You need to try and it has to be allowed to fail. If you have this sort of climate in school: try and fail, try and fail – its OK. But you have to start early because its good as a student to have this chance to have an entrepreneurial course. But in mindset its to late. Of course it can be good but usually you have to start earlier.

Matias Bonnier:

I'm the chairman of the Karl Adam Bonnier Foundation and I also have another path because I'm the general elect of the Swedish-American chamber. One of the observations that I have made. Its more fundamental. You're talking about teaching entrepreneurship but that is still the old german lecture style you have to get students to teach themselves and communicate. You mentioned the Chines dorms and so. One matter that I experienced learn being going to a school in the United States was the "case matter". We had interaction in the classroom, it was called the case matter. We had interaction in the classroom all the time. We were free to make dumb mistakes, dumb comments and everbody learned from that and you were also free to make new trials.

How can we make that come into the Swedish education system? Create that interaction? You don't have the lecture style where you have a teacher pass their knowledge to the students but there is a true communication.

Carin Holmquist:

I'm a professor of entrepreneurship at Stockholm School of Economics (SSES). I find this very interesting and a bit struggling too. I agree with most what is being said, especially the last comment. But I think we shouldn't say that things hadn't happened. For instance from the GEM, The Global Entrepreneurship Monitor Study, I know that it had changed a bit. The Swedish perspective on entrepreneurship is changing. And from my own school, we started an incubator att SSES ten years ago and basically it has been very successful but basically we were building on the entrepreneurial spirit of the students of SSES. You are mostly talking here about students in the sciences in technical, medical but we shouldn't forget that a lot of the good businessess for instance is done in the humanity and social sciences. Because business is business, entrepreneurship is about making money creating value.

But my point is that this is addressing your thing and also Mauds on role modelling. I think that we have to change fundamentally the educational system and I think that you are so right about – because entrepreneurship really is about a learning style. I red a couple of phases in a PhD-thesis in entrepreneurship and than it strucked me that be an entrepreneur is to be a constant student. Its about learning and learning how to learn an how to go about finding out new things.

Then we also have a lot of changes – my students hate me when I say this – but in 200 years we would not have classes. Because we don't have need for it. Why should the bright students be locked in with people like me when they can do and learn the same thing to the computer? We are misusing teachers because my time is better spent being advicing them to what they already have learnt. Because now I'm standing there doing things that they could just as easily do

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themselves. So, I think we have to rethink the whole educational system, totally, and I couldn't agree more with you Maud than the teachers – I'm very frightened about the thought that Swedish teachers should teach the students entrepreneurship because I'm not sure that that could be the thing, but entrepreneurship is about learning. And its not about creating new companies, its about learning and seeing how to create more value for yourself and for society and others and I think we have to change.

Mikolaj Norek:

I think you Per Frankelius, when we talked before, you had something that was very close to – on a critical side – to what Carin just said.

Per Frankelius:

I was very happy to hear about the Israeli case here. Dan said we need really professional knowledge in business, market service and like that. That is really deep competence, its hard to do and we need high level competence in the business field. The problem is that our so called business schools in the western world have had a lot of critics, for example Henry Mintzberg, well-known professor, he said that "they are wrong, they are failing because they are reading things not training things, they are focused on administration like business administration not creation. They focus on wrong issues and I think we have a lesson to learn in the western world to create new kinds of business education but the problem – or challenge – is: how could we integrate practise with education without losing the academic kind of learning spirit. How can we melt the practise and theoretical worlds. I think Henry Mintzberg had a good point here, we need to change the business school system. I would like your comment on that.

Karin Markides:

I really want to say something here because we shouldn't be too depressed about this here because there are some good examples that we actually have. We have action-based entrepreneurial education in Sweden. Even to the point where it is acknowledged at Stanford, for instance, that are really opening up for collaboration. Because the action-based learning is more hands-on in Sweden than it is even actually at Stanford.

Even though we don't have to much of it yet but what we have is very successful. Just one more example: I think its important to also acknowledge that these multinational companies that we have in Sweden – they are also giving away a lot of their skunkwork to these different action-based education that we have in the universities. We should acknowledge them for that and do that more because when we meet in the clusters around the universities today and we see more and more of these meeting places, innovation hubs, we have several companies opening up end even taking care of innovation hubs to really transfer what they have in their doors to these action-based educations. That is very well done at the masters-level because then the students have a bachelor with them and they can connect.

Joseph Ackerman:

I am Joseph Ackerman and I'm from the Embassy of Israel and I'm actually the representative of Ministry of Industry, trade and labor which is the government agency that promotes the innovation at different stages. I want to react on one point to make another comment. Peter brought up the question of exit. Should the Israeili mentality be exited or should we build big companies in Israel. I think this exactly tells us where Israel are today. Israel as a young country moved into this whole innovation cycle at the beginning had to this exit in order to build this whole culture in Israel. Today we have a whole lot of serial entrepreneurs who are now able have

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money for themselves to now settle down and enjoy the fruit of being an innovator and maybe start building companies.

I think one of these examples today is what's happening in Israel better place. They didn't sell themselves to become an international company but from Israel is the new innovation, they build up electric cars that brought up for an organisation. Its coming up from Israel a center, and its in Denmark today, in the Hawaii, and many other countries around the world. The two cultures are going together and this may lead me to the point what I have been observed in my three years here in Sweden: The difference of the cultures. Sweden is a mature economy. Hundreds of years of experience and from this has regular, multinational companies a experience.

They are now dealing with the new economy of innovation and they have to rebuild themselves and reborn in their thinking. Israel is now in the first part of cycle and has started as a young country. And now maturing and try to build the big companies. This is part of getting to the next stages. We complement each other. When Sweden has the experience of the more mature cycle Israel has now the experience to share with others how to build from the new involving ecosystem of innovation.

Bo Dahlbom

This is a fascinating seminar. So many intelligent things had been said. I really appreciate the last comment and of course all those of the panels. But being an entrepreneur myself, working with entrepreneurs for at let three decades and being married to an entrepreneur I have to say This celebration of entrepreneurship and entrepreneurs are often very noxious and difficult people. And I'm happy to be an normal Swede and I'm happy about the Swedish, an even European, culture.

I don't think we have to become Chinese, or American or Israelis. I think we can stay Swedish so I don't think that the discussion of entrepreneurship should be too much of the attitude or specific personalities of entrepreneurs. And when you speak about schools you shouldn't speak of schools and the educational system teaching specific attitudes or personalities or cultures forming these small children. What you should talk about is schools that teach them about the world, about reality. How its like out there. How you survive out there. How you make this world, this planet survive out there and if teacher begin doing that we will get lots and lots relatively nice European entrepreneurs.

Dan Schechtman:

Relating to what you just said and relating to a question before: how are people willing to take risk? I have been thinking about it and in Israel people are willing to take risk very often, very frequently and I think it has to do with the Jewish mother. She tells her boy or girl from the age of one day "You are wonderful". "You are so clever and wonderful, so great and you are the greatest." This is not a joke, this is really bringing up people who are willing to take risks. They are very often obnoxious but we are talking about entrepreneurship so it maybe takes a person with selfconfidence from the early childhood and an obnoxious person to build an industry. Maybe its not the person to live with but this meeting is about entrepreneurship.

Göran Sandberg:

I'm the CEO of a Wallenberg foundation which is one of the biggest private research foundations in Europe. We have spent a lot of time analysing Swedish science and we came to the conclusion that its basically quite useless. And then we have a advisory board of just Nobel Prize laureates to presenting this, what is it. They say the best post docs that we can employ that are Swedes. I started to think, I mean Swedes are really good on this. If you talk about kindergarten – its to many kids. The school is useless and I believe there is a lot of things you

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could do about the school. The universities are overcrowded, we don't spend time with the students. PhD-studies is basic, but still – if you ask a CEO of Ericsson he says the best engineers you can hire they are Swedes. If you ask the Medlabs of California the best top post docs they can hire are Swedes.

So, we have some type of culture that are educating mature people. Maybe it's the consensus environment that we have that is creating something that is unique. So what should we do? Transfer ourselves to China, California or to Israel? That will never happen. We have to analyse ourselves and see how can we build in this type of individualism that you are talking about, because you were talking about entrepreneurship but we are really talking about focus on the individual, student or person which we are not allowed to do in Sweden so I think it's important to look at what we are doing. Now we have another innovation index: Sweden is on the top. And what are Swedes doing then. Let me say that: it must be wrong with the index. And we have spent a lot of time. A lot of people in the business schools is spending time saying "this and this parameter is wrong". If this has been in the States: "Great – we are on the top of the index." So maybe we should be careful in how we analyse our own country.

Mikolaj Norek:

Wallenberg foundation, you just launched something called "Wallenberg academic fellows". I think this is one of the largest actions you ever took as a foundation, 2.4 billion Swedish crowns. When you choose your fellows are you looking for entrepreneurial academics or do you look for academics?

Göran Sandberg:

We use the same people as select the Nobel Prize laureates, the committees. And they only go for scientific excellence, nothing else. And of course individual capacity, not just track record. If they select the Nobel Prize Laureates they can select the best Swedes too and allow them to do research.

Per Eriksson:

I'm the President of Lund University and former I was the Director General of Vinnova running the agency for innovation and corresponding for Israel in different programmes in Technion especially. I would like to have a response from you about exit. Because in Israel I've been seeing this have been growing. Starting with exits, starting with incubators and now has been growing more big companies. A question some years ago was about: how do you do in Sweden about big companies we have to learn in Israel. Now you are building big companies and you are not talking so much about exit.

The thing that's worrying me in Sweden is the fact that we partly, we learned a lot of good things but partly we go the other way around. We are selling out many of our big companies. We have sold out for instance the pharmaceutical companies Astra, Pharmacia. The Danes go the other way around. They are building the Nova Nordic, they are building a total innovation system but they are owned not by the stock market, they are owned by foundations. So they can take long time investments. I think this is a key for building for the future and I would like you to respond on what you really think for the future for ownership and really good strategy for owning company, growing company in the international competition.

I can also add that we really adapted from Israel the incubator programme we had imported and translated to our system, we also imported SBIR systems from US and translated this to the Swedish "Forska Väx". We do as Chalmers also at our university: we train entrepreneurs inside the university. We are very happy that the researchers in Sweden they own their own RPR – so

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they can patent. Its not the university, its their own entrepreneur so we have a culture hear. And the union is also supportive in the Swedish system.

What is important for owners of companies grown long time because I think there is a relation between research and high competence that's long time investments and that means I think that normally you have a long time ownership for companies growing international competitive. I think that is was China is doing with the bank system.

Dan Schechtman:

The company that will stay there for very many years is to build a family company. Convince your son or daughter to take over the company after you don't and make sure that your grandchildren are doing the same thing. The problem is in today's system there are very few such companies. Usually the companies are own by the public and the people who manage the company can be fired like just that so it destroys the stability of the family type company.

I think in Sweden you still have family companies that are family owned generation after generation. The wisdom is to have your children follow your footsteps and take control, bring them in. In Israel we have very few companies like that in which the second and third generation stay in the company and this stay in the country. You mentioned Volvo that was sold to the Chinese but did they fire the Swedish employee – they did not. That might not be such bad idea as it sounds. They bring in money and technology and competitive spirit, That might not be so bad.

Martin Schuurmans:

I just want to get back to your point on education, maybe copying China or United States or what ever. That is certainly not what I want. That might be silly and stupid – you have to start from your own strength, that is very clear. But building on what Dan Schechtman said: I see in China a culture where young people are looking at life as a once upon a time opportunity. That is not the case in Europe. That is very much the origin of school system, of our value system. Whether we like it or not that would have to change.

Even if we would get entrepreneurship learning, by-the-way for me its always learning by doing, that doesn't help to do have business schools and do nice MBA:s. Wonderful in its own weight but not enough to do what professor Schechtman has been talking about training your engineers to be also a product person and moving on to business.

But even if you would fix that then Europe still has a problem, that's what I said earlier, put the money where your mouth is. Even Skype had never made it without the American investments that made it grow. There is a big issue here so you talk about of redistribution of money. In United States , in Brazil, in China far more money are available to let companies really grow. Half of the bio Nobel Prizes goes to Europe. I believe one sixth, one seventh of the companies in the bio domain come from Europe in comaprison to the US.

So there is a huge issue on one hand the entrepreneurship, education and mentality, learning by doing. And on the other hand let companies grow. There is a European dimension to this because maybe for small countries you can not solve this officially. We have the business advantage of being a bit small but there is on the other hand of course chosing its own way just like the different road.

Karin Markides:

First of all I want to thank you for making me feel good. I have two sons that are entrepreneurs – at least that I'm a good mother. But I also think that so many good, wise things are said here but maybe one of the most important things, and also hard to do, is also to change the culture. We have one thing that Martin has said: to make failure to be equal with experience we have to do

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something about. Because we don't see it as an experience in Sweden. I think that is what makes a lot of people that wants to build something, to create something – they know its not about one life, its about one chance and that is not so good. Its better to build a team. When you build a team in the United States to start a company you really have to question a person that haven't failed. If you suggest a person that have never failed and you have to argue a lot because how do ve know that that person will survive when there will be a tuff time? Its completely different in Sweden, and maybe in Europe. I think that is a very important thing to work on.

Maud Olofsson:

I have some experience in changing values. When I started as a Minister of Enterprise, I had a great ministry and a lot of good people working there. But to be honest it was quite a frightened organisation. They were not allowed to make any wrong things. So I said a very important thing to them: "If you don't make any mistakes you haven't done enough." That was my rule.

And I can see during my five years as a minister it changed a lot. Because when I said that to them they were allowed to make mistakes, they were allowed to try things, to think in new ways, give me new proposals; we can do this and we can do that. And I saw it so clearly this five years that it changed. We can do more but I think s a leader you can also tell your employees that "if you don't make any mistakes you haven't done enough".

Secondly I want to say, I think the entrepreneurs have to be the role models because, as said here, teaching entrepreneurship is difficult. But I think you can get inspired by those entrepreneurs. I have seen that with my women ambassadors. They have given so much inspiration to the students about their own private companies. The dream that they fulfilled, the spirit that they have and what is the most important thing to do as a entrepreneur and so. I think we don't lift up the entrepreneurs so I think they have to be the role models for all of us.

Last but not least: I am also a happy mother. The story is that my youngest son, Jan, he is 26 now. When he was a kid, he was a very hard son and he was following Rolf and I all the time asking "can we do this, can we do that?, can you help me, can we start this?". We were so tired and sometimes Rolf said "I'm gonna put him back here and lock him in", because he got so tired of him. But I red a newspaper and it was an article there and they explained about children: "if you have a child like this, be happy – you have an entrepreneur."

Anders Flodström:

I just want to say something completely different. Its about countries competing with creating as much new products as possible. Who's gonna win that competition? If we look today I mean, even if you independent on value system you have when you look upon research you talking about grant challenges, then you talking about climate, and you talking about lack of energy resources, about 25 percent of all people living in urban environments, your talking about security and safety. For me its quite fun, if you go hundred years back if you asked a physicist he wouldn't talk about that kind of challenge. He would talk about what should be the next type of scientific discovery. And how he is planning for that. Somehow the world has changed from being science-driven to be challenge-driven. Somehow the world has changed from being that's all about be solving problems create the bias. So we created the problems and we gonna solve the problems. And when that's gonna happen it's an opportunity for Europe. Its gonna take that you both do it in new infrastructure that contains public good but hris infrastructure also gonna have a large challenge on new products. And the ones that could get the public goods governance to join those industry in creating the new products those are gonna be those countries that really gonna be able to innovate and create economic value.

I think Europe will have an advantage because of the governance we have had in a sense for many, many years to really be leading in this case. That's why I'm more worried about when

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Martin tells me about clean technology that is happening in China. That should have happened in Europe.

Mikolaj Norek:

I think the discussion we have had here today is quite symptomatic to how entrepreneurship education and maybe entrepreneurship as such is seen. We started off with thinking and talking about a business concept, buying and selling. Very easy maybe in a small world and maybe just as easy in the large world. But what we are kind of really talking about is also reflected in our discussions. We came immediately on the topic of culture. And being from the Swedish side explaining in a European fashion way why it doesn't work or from the Israeli side explaining why it works. There is always culture that is somewhere behind.

What I would like you to take home, and this is the time when half the room gets sleeping and half the room gets angry, I will read something from Finland. The Finnish National Board of Education they wrote in 2004 something that was called National Council for Basic Education. And there it says: "The aims of entrepreneurship education are help students to proceed society from the viewpoints of different players to develop the capabilities needed for civic involvement and to create a foundation for entrepreneurial matters. Support to student developments as independent initiatives taking, conscious, cooperative and engaged citizens.

Maybe its not only about new businessess after all.

Tor Bonnier:

We talked about creating risk spirit, we talked about creativity and we all agree on entrepreneurship is important to have in society and to create competition between different nations and regions. It is good to hear that we need to do it from our own culture. We can't just be a "me-to" and do what everybody else is doing and how they do it. Even if it means that we also will be obnoxious in our own personel way.

We focused a lot on the higher education but its also good to hear about the Israeli example that to really bring in the entrepreneurship into the lower education. This is something that Sweden should and probably will focus on much more.

Never stop asking why. Never give up. And when you don't know yourself make sure that you get people that do know.

We also talked a lot of the aspect of exit and related to risk. This a topic that we gonna touch upon in the spring about family business innovation. We were really fascinated by the idea that potentially family businessess be more innovative in the long run than public traded companies. For what reasons – don't they have problems with nepotism and things like that? Probably. They are also perhaps willing to take long term risk in a very different way than the public companies. This is something we wanna dig deeper in.

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