With Open Innovation to Success

Henry Chesbrough
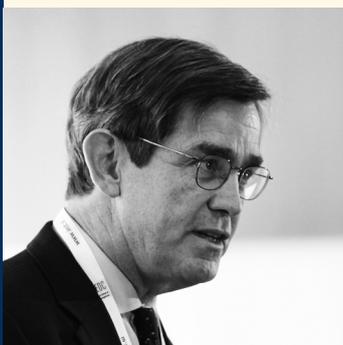
"Nobody, no matter how good or how big, has a monopoly on useful ideas."

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At the invitation of Studio Moderna
on 20th anniversary

Opening Words by Prof. Danica Purg

It is my pleasure to welcome you to the twenty-fifth Presidents' Forum of the IEDC–Bled School of Management, titled "With Open Innovation to Success". I am delighted that today we have with us the author of the open innovation concept, Professor Henry Chesbrough, who is one of the world's leading management thinkers, according to the Thinkers50 list.

This is his first lecture in Slovenia. I am very thankful to Mr Sandi Češko, who, on the occasion of the twentieth anniversary of his company Studio Moderna, has made it possible for us to have Professor Chesbrough with us today.

Professor Chesbrough is the executive director of the Garwood Center for Corporate Innovation at the University of California, Berkeley, and the author of several acclaimed books, the latest of which is Open Services Innovation: Rethinking Your Business to Grow and Compete in a New Era. You will be receiving this book as a present from Studio Moderna.

The open innovation approach goes beyond high technology – computers, telecommunications, pharmaceutics, biotechnology and so forth. It is also relevant to more traditional sectors: the automotive industry, health care, banking and insurance. These, too, are gravitating toward open innovation. For this reason, we have decided to complement Professor Chesbrough's lecture with a round-table discussion involving experts in various fields, who have been asked to share with the audience examples of open innovation at their companies. The panel will be led by Mr Wilfried Grommen, account chief technology officer for the public sector in Europe, the Middle East and Africa at Hewlett Packard.

[01]

The open innovation concept is also well known in Slovenia, and, more generally, in Central and South-eastern Europe. In fact, a book on the subject, co-authored by Dr Andrej Vizjak, who is here today, is soon to be published. Its title is Innovation Excellence in Central and Eastern Europe.

I like the topic of today's forum because of its positive content. We need this in the current period, characterised by pessimism and lethargy. I hope that today's event will be a source of inspiration for all of us here. Innovation and open innovation are also something that the IEDC–Bled School of Management is well known for. Yesterday I returned from London, where our school was one of four to receive the AMBA Innovation Award. As you know, AMBA is the world's main association of MBA programmes. We were chosen among 700 MBA programmes from 195 business schools in 75 countries. What is our innovation about? Since we started our school in 1986, we have become well known for our emphasis on art and aesthetics. From the beginning, we have understood and appreciated the power of art to open the minds and hearts of our students to the complex dynamics of managing and leading.

I would also like to mention our extensive research on "hidden champions" in Central and Eastern Europe, Turkey and Kazakhstan. We call these "dynamically changing environments". Hidden champions are originally small and unknown companies that have become global leaders in their niche markets, mostly because they have practised continuous innovation. They show us how important it is to have the courage to change, innovate and contribute to the creation of a better future for all.

Many of our alumni demonstrate the same courage. Tomorrow, at our alumni gala, they will be given the UniCredit Alumni Achievement Award. This is our way of recognising their outstanding achievement in leadership, innovation and service to the community. The recipients of the 2012 Award are Melanie Seier Larsen, principal of A.T. Kearney and president of the IEDC Alumni Club Slovenia; Ardian Hoxha, president of the ReHoxh Group, Kosovo; Ivana Gažić, chief executive officer of the Zagreb Stock Exchange; Anwar Irmatov, head of branch, Samsung, Russia; and Jovan Šarenac, managing director of Henkel Serbia. My congratulations to the winners! Although they are going to receive their awards tomorrow, I think we should honour them today, too.

We have participants from twenty-two countries at the Forum today. Also with us is Mr Craig Harwood, HR Director of Coca-Cola Central and Southern Europe, who has brought us the message that the Coca-Cola Company will continue to support our Chair for Sustainable Development. Sustainability is another source of innovation at our school.

[02]

This is a lot of good news for a single week! I wish you, my dear guests, a very pleasant and inspiring day!

Prof. Danica Purg
President

Opening Address by Dr Danilo Türk, President of the Republic of Slovenia

I am always pleased to be at the IEDC–Bled School of Management because I always hear good news here. We have already heard such news this morning. This is a very good way to start a conference. I would like to congratulate the IEDC on the important award it received yesterday. I am sure it will not be the last award this school receives; there will be many more in the future. They will reflect the vitality of the school and the spirit of optimism and achievement that is associated with it.

It is always a pleasure for me to come to the Presidents' Forum. I must tell you that this is now an established tradition in Slovenia and I feel an obligation to come to this event every year. The Presidents' Forum is a very important gathering. There are two such events at this time. One takes place at the United Nations in New York, bringing together the presidents of countries. The other one takes place at Bled and brings together Danica Purg's guests. This year I did not go to New York because, as you know, we have an electoral campaign going on in Slovenia and I am very busy campaigning. Still, I could not miss the Presidents' Forum at Bled.

I would like to share with you some general thoughts about innovation, which is at the centre of your concerns. I am sure that your discussions will be inspired by your experience, knowledge, business acumen and the other useful qualities that are richly represented in this room. I am going to speak from the position of a politician who is thinking about what is going on in the world, reflecting on the duties of politicians in the future ahead of us.

Obviously, thinking about innovation is always necessary. The period that we live in abounds in innovation. It is one of the most innovative periods in recent history. In fact, we are sometimes overwhelmed by the amount of change that has happened as a result of developments in information technologies, biotechnology, and other fields. This also includes areas such as civilian aircraft, which has developed and expanded far beyond what seemed possible thirty or forty years ago.

We have started thinking of our era as an era of globalisation on one hand and innovation on the other. We also believe that this is a unique period. And, of course, it is in many ways. But we have to understand that this is not the first period of globalisation. Globalisation is a very old process, which started centuries ago. There have been several important revolutions in the past: the Industrial Revolution and the invention of the steam engine, the revolutions followed the construction of the internal combustion engine, the period after the advent of electricity, and so forth.

One can legitimately ask whether the most recent period of globalisation and innovation has produced an amount of social change comparable to

that of the past. The Industrial Revolution of the nineteenth century generated enormous social and political upheaval in Europe, as did the widespread use of electricity. These developments affected the way people lived, interacted, did business and politics, and formed social networks. Everything changed as a result of this wave of innovation in recent history. Also, the previous revolutions produced more jobs than have the developments we are witnessing at present. The revolution in the information field has not yet had the same effect.

I believe these changes have political consequences as well. For example, universal suffrage did not happen in the nineteenth century, but later. Women's right to vote is a very recent innovation in politics. There were some political movements that were able to introduce technological change in political programmes in a more indirect way. Perhaps we can quote Lenin – today with a sense of irony – who said that communism was Soviet rule plus electrification. The electrification of Russia was a big project, and it inevitably had a big political impact.

I believe today's politicians should think about how technological changes, and changes in modes of production, influence the social fabric of society and impact its political life. This is a major question today. I would say that we do not see enough innovation in the political organisation of society that is comparable to what has happened in other spheres of life. In my view, this is a problem. We have to think of politics in a variety of new ways and with an innovative spirit. Of course, it is very easy to reach this conclusion. The difficult part is to find a good approach.

[04]

I would like to draw your attention to a recent experience that is relevant to politics, business, and social organisation today, as well as to technological change. What I have in mind relates to the concept of sustainable development. Originally, the concept had to do with the environment. An impressive report by an international study group stressed the need to protect the global environment in order to ensure the sustainability of development. For a very long time after that, the debate on sustainable development focused on environmental issues. The question is whether this concept is not much larger, entailing many further tasks.

The debates on global finance or other major economic issues always involve sustainability. It is interesting that sustainability has crept into every discussion in the field of economics today. Even the reports of the rating agencies that downgraded Slovenia last August speak mainly about the sustainability of financial arrangements designed to ensure budgetary consolidation. Sustainability has become a central topic in contemporary economics and thinking about development.

Let us think about this and compare this fundamental insight, which is not so hard to reach, with an experience that has to be given further

thought. That experience relates to two summits on the global environment. The first took place in Rio de Janeiro twenty years ago; the second was held in the same city this year. If we compare these two summits, we will notice that the concept of sustainability was articulated in two very different ways. Twenty years ago, the optimistic spirit of the time led to the belief that there would be global normative arrangements defining the path toward sustainable development. The key achievement of that conference was the agreement that the world had to move toward a treaty on global warming, a treaty on biodiversity and a set of other international instruments. That thinking was based on the idea that there should be binding international obligations defining a framework for national policies and legislation within which national states would work out their specific roles in the promotion of global sustainable development. The focus was on hard laws and binding obligations. That was the way to go.

That idea came to an end in Copenhagen in 2009. The European Union countries, and certainly Slovenia, were very much in favour of a set of binding obligations as an outcome of the practices following the Rio de Janeiro summit. Three years later, the situation has become clearer. The world has moved from a belief in a global system based on binding obligations to something much softer: programmatic norms, desirable objectives, recommendations and things of that kind. That is what prevailed at the Rio de Janeiro summit in June of this year. This gives a very different twist to global concerns and policies for sustainable development.

[05]

Does this have serious implications for people who make business decisions? I believe the answer is yes. Earlier, business could legitimately expect that the global set of binding obligations would be placed within an international legal framework on the basis of which national legislation would be developed. As a result of all that normative development, the business environment would be more predictable, more clearly defined and of course easier to manage. That was the expectation discussed at the World Economic Forum in Davos and elsewhere. That expectation was very real. But only two and a half years later it has practically evaporated. So where are we now?

We are where the world has been many times in the past. We are left with the need to innovate in business and other spheres of life. We also need to think about what could drive the world toward a future of sustainability. My hypothesis in this regard is that there is a need for innovation in four areas.

The first is scientific discovery. We can be reasonably optimistic in this respect. The development of science marches on, and we can expect that scientific innovation will spill over into other areas in which sustainable development is also needed.

The second field is engineering. I believe we need to think about it more seriously than ever. In the past twenty years, many people in the European Union thought that financial tricks were enough to generate economic development. Now we know that this is far from sufficient. We need to promote engineering, and we need innovation to do so.

Obviously, business models also need to be innovative, and I hope that you will focus your attention on them.

And, finally, there is a need for political innovation. I expect you are not terribly interested in political innovation at this conference. There are other places to talk about it. A little while later, when I leave this conference, I will be involved in political innovation. We have to think about what this means for a country like Slovenia. Although every country is different, I suspect that people everywhere have good reason to be dissatisfied with the quality of politics. This means there is a need for political innovation.

Ladies and gentlemen, these are some of my basic thoughts on the topic you will be discussing today and tomorrow. I wish you success and I promise to read the proceedings of this forum. Danica can testify that I always make this promise and I always keep it.

[06]

Let me conclude on a very serious note. The subject you have chosen is very important. Give it careful thought, and also think about the broader context in which innovation is taking place today.

Thank you very much, and have a nice time in Bled.

WITH OPEN INNOVATION TO SUCCESS

Prof. Henry Chesbrough
Haas School of Business, University of California, Berkeley

First of all, I would like to congratulate this school on the award it received yesterday from the Association of MBA Schools. One of four out of seven hundred programmes – that is a great achievement!

Thank you all for being here this morning. I also want to thank the IEDC-Bled School of Management, as well as Studio Moderna, for inviting me here. This is a marvellous experience. They even did a great job on the weather! Being from California, I take good weather very seriously. This is quite impressive. Well done!

I am pleased to present some of the research that I have been doing on the processes of industrial innovation. There has been an evolution in the research I have done because **innovation is one of those things that are always changing**. If anybody tells you that he has the definitive last word on innovation, all you have to do is wait a little and you will see that he is wrong. This is a challenge for all of us. I am going to share my ideas and, at the round table after my lecture, I hope to learn from some of your experiences. I am interested not only in open innovation but also in innovation in general.

[07]

We are trying to encourage people to copy and share, to reuse and remix. But in doing so, they should give attribution so that what came before is not lost in the process. I am going to share with you some thoughts from my book Open Innovation: *The New Imperative for Creating and Profiting From Technology*, as well as my two subsequent books: *Open Business Models: How to Thrive in the New Innovation Landscape*, and *Open Services Innovation: Rethinking Your Business to Grow and Compete in a New Era*. They will give you a snapshot of my own thinking and how it has unfolded. The first book is about creating new products and technologies. The second one demonstrates that there is more to innovation than that. Innovating business models can be as important as innovating technology. Yet companies that spend millions on research and development often lack the processes to explore new business models so as to commercialise their business ideas. And the last book says that in much of the economy we are in, not only in Slovenia or the United States, but in all the OECD countries, the predominant businesses are not product-based but provide services. How do we innovate in services? This is the most recent book I have written. I would like to share with you some thoughts from all three books.

Let me begin with a model. Academics love models. Those of you who have suffered through an MBA programme have seen many models. A model is a simplification of reality. We know that a model is not the same thing as the real world. But we simplify it so that we can take some of the complexity out of the picture. What remains should be clearer. Now, here is a model of research and development. It represents a funnel, turned on its side. The idea of the funnel approach is that when companies launch new investigations into a research and development process, they consider many possibilities in the beginning. The funnel begins quite wide. We explore many markets and many possible ways of serving them. But as we get closer to the market, the funnel narrows as we begin to select only the most promising of the projects and discard the rest. Finally, we take the best project to the marketplace.

I have called this a closed innovation system. The reason that I have done this is that in this model there is only one way into the process. And, at the initial stage, from your organisation's own science and technology base, there is only one way out of the process into the market: through your own channels of distribution. There is only one way in and only one way out. Keep this in mind and you will see, as we move forward, that I will start picking apart this model.

[08]

Here are some examples of this type of process. AT&T Bell Laboratories were one of the pre-eminent industrial research organisations of the twentieth century. They looked like a fortress designed to keep their ideas in and prevent them from leaking out. Another famous organisation of the same kind is the T.J. Watson Laboratories of IBM. It is situated in upstate New York, high on a hill, looking over a beautiful valley. They have very tight security around the premises. Both these places can be thought of as fortresses of knowledge. Some of the great work in the twentieth century came from this type of facility.

Shockley, Bardeen and Brattain shared the Nobel Prize in physics in 1956 for their discovery of the transistor. This revolutionised what became the electronics industry. All their research was funded by AT&T Bell Laboratories. But it would take more than a decade for AT&T to ship a product that used transistors. The first company to ship a product that used a transistor was not AT&T but a little start-up company in post-war Japan, a country that had been obliterated in the final days of the Second World War. That little start-up was called Sony. It used a transistor in a hearing aid. By using a transistor instead of a vacuum tube, they managed to shrink the device so it could be worn behind the ear. Even though Sony did not invent the technology, they were the first to innovate with it.

This is the first point I want to make. In English we sometimes use "invention" and "innovation" as synonyms. But they are not. **You can be very inventive but not particularly innovative**. Think of most universities. They are always inventing new things, and it is good for society that they do so. But universities are terrible at commercialising their inventions. It is necessary for society that inventions get out of the university and into the marketplace. This can happen through companies like Sony that have not necessarily invented anything but know how to take an invention and build a device. That is the innovation part of the journey. So innovation does involve invention, but it is invention plus commercialisation.

You can begin to see markets between the invention process and the process of innovation. When fortresses of knowledge create wonderful inventions but fail to commercialise them, their financial sustainability is at risk. **If you invent things without being able to commercialise them, it is hard to sustain your investments in innovation**.

There are some assumptions in the model that I began with. They include the idea that if I discover something, I will find a market for it. As we saw, AT&T discovered something but it took that company a decade to find a market. Think of industrial lasers. We knew how to make them many years before we knew of a way to use them. It turned out that the biggest application for industrial lasers was in CD and DVD players. That is something that the inventors of laser technology had no concept of. That was not in their minds when they developed their ideas. Sometimes we cannot predict the best use of the technology that we have invented. That is one of the problems of the closed model.

[09]

This brings me to the second logical assumption. If I discover something in my fortress of knowledge, I will own it. This means that I can exclude you from copying me. If the first two assumptions are true, the fortress of knowledge has a temporary legal monopoly. That is a very profitable business for an organisation. But if they are not true and others can invent around the intellectual property that you have, you have taken the fundamental risk of funding the innovation and eventually having to share the market with everybody else. That does not sound like a very exciting proposition.

There is another assumption: I can anticipate the important technology in advance. In this model, you have to be like a chess player, thinking several moves ahead. That means predicting the future and making investments today that will put you in a successful

position five or ten years down the road. But many of the most important technologies around us today came from surprising places.

Think of the Internet. It did not come out of the research laboratory of a particular computer manufacturer. It actually came out of university laboratories working with governments in national security. Originally, the Internet was designed to be a network that could survive a nuclear attack. Every other network until that time had a hub with spokes radiating out of it. If the hub stopped working, the whole network disappeared. The Internet provided a network that did not have a centre. There was no commercial purpose for this initially. It was for defence use only. But think how it has changed our lives today. That vital technology was not invented in any individual fortress of knowledge.

In the closed model, you want to attract and keep the best people in the field. If you can do that, what a great advantage you have! But even the best organisations today do not have the best people working for them. This is a good thing for society, but it is a serious problem for organisations practicing the closed model.

[10] At this point, the logic of the closed model begins to erode. That model worked well in the twentieth century, but it is increasingly inappropriate for the twenty-first. There is a particularly good implication here for countries like Slovenia. The fortress model was for the very largest organisations. Everybody else who was not big enough to play the game had to wait for leftovers. That is difficult for small countries.

In the more open model that I am going to describe in a minute, there are many more opportunities for smaller organisations and countries. You no longer have to wait. You can actually lead in particular areas.

One of the things that has happened from the twentieth to the twenty-first century is the expanded mobility of the workforce. Engineers do not stay in a single company during their whole career. They change jobs many times. Companies that have laboratories in China tell me that their annual turnover is twenty to twenty-five percent. This means that every four or five years you have a completely new population in your research lab – which means that knowledge moves out of the initial company to the new one that has hired these people. That turnover spreads useful knowledge throughout society. Indeed, all the factors that I am going to discuss have this property. They take concentrations of knowledge and spread them worldwide.

A generation ago, universities were pretty closed places. Most of the research funding came from the government, and the evaluation of research projects and faculty came from peers. It was research by faculty for other faculty. The connection to the marketplace and commercialisation was pretty tangential. By contrast, today's universities are much more deeply engaged with companies than they used to be. There is a very practical reason for this. Government funding for research has shrunk, whereas industry funding has expanded. Even Berkeley professors can figure out that if their money is coming from industry, the research agenda has to be relevant to it. This does not mean they should become contract researchers for companies. They can still think about the future in a theoretical sense, but they must also show some practical and commercial sense.

Let me give you an example. The president of Stanford University, John Hennessy, is a very respected computer scientist and a former dean of the engineering school. He has taken three leaves of absence to start up companies in Silicon Valley. He has been an entrepreneur three times in his career. Today he sits on the boards of Google and Cisco. This is not somebody who is afraid of being too close to industry. He has been in industry. He understands how to work and collaborate between universities and industry. I think that this is the model we will see going forward. There is going to be a much deeper engagement of universities with industry. Again, this is a good thing for society.

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But from the standpoint of those fortresses of knowledge, universities are in the business of publishing their research. And the students we teach and send out into the world take this knowledge and carry it with them and spread it more widely. So again this acts as an erosion factor to spread useful knowledge more widely.

A third factor is the diminished hegemony of the United States in technology. In the period right after the Second World War, the US economy accounted for about fifty percent of the world's GDP. Today it is about twenty-two percent. Again, that is good for the world, but it means that useful knowledge and technology are now global. If you are looking for the best places to go, sometimes that is the United States but oftentimes it is a small country like Finland or Israel or Taiwan – or Slovenia.

The last thing that I want to talk about is the venture capital industry. It is more developed in some countries and less so in others. But in all cases venture capital does not pay for research. Venture capital only pays for development. No research, only development.

That means the research has to come from somewhere else. So through forces like venture capital we really see these markets: between invention and research on the one side, and development and innovation on the other side.

Thirty years ago, venture capital was a very small industry. Today there are trillions of dollars being managed in the process and, again, you will never find a research laboratory funded by venture capital.

And here are some data to illustrate what I am talking about. These are just data on research and development spending and do not necessarily relate to innovation. Still, at least in terms of the effort of who is spending, you can see the pattern I am describing about this knowledge spreading more widely in society. These are data from the National Science Foundation in the United States and have been collected through annual surveys. I have taken selected years to show you the change over time.

Back in 1981, the largest companies, with more than twenty-five thousand employees, did more than seventy percent of the research in that year. The smallest companies, with less than a thousand employees in 1981, accounted for less than five percent altogether. [12] So as recently as 1981, most of the research and development was in these very big companies I have been describing to you – the fortresses of knowledge. That is where most of it was being done. And the small companies in that period, taken together provided a small part of all research and development. Most of the action was happening in the big laboratories.

Now let's go forward in time to 2007. The large companies are still very important. They still account for thirty-five percent of research and development spending. But companies of less than a thousand employees, taken together, provided nearly twenty-five percent of research and development spending.

All the growth in research and development spending from 1981 to 2007 has come from the smaller organisations. The contribution of the large companies, adjusted for inflation, has barely changed. All the growth is in the small enterprises. We now have a much more level playing field. I said earlier that in an open model there are more opportunities for more organisations of all sizes. Here I have provided some data to support what I am telling you. There are more opportunities for more of us. We have opportunities to be hidden champions, to be specialists in particular areas or to collaborate with larger organisations to the benefit of all parties.

Here is something from the pharmaceutical industry. One of the most scientifically advanced companies, the company that spends the most on research and development in pharmaceuticals, is Merck. This is what they said in their annual report to their investors: they do about one percent of the world's biomedical research. There is no way that they can be successful relying on just that one percent. There is too much going on in various scientific headquarters for them to be on their own. They must be gaining access and tapping into the other ninety-nine percent. Merck has also acknowledged that the cascade of human knowledge flowing from biotechnology and the unravelling of the human genome is far too complex for any one company to handle alone. Here we have one of the most scientifically advanced companies, with one of the largest internal research and development networks, saying that it must open up and reach out.

Bill Joy is a graduate of the University of California at Berkeley. He obtained a PhD from their computer science department. This man is the founder of Sun Microsystems. Some of you may know Sun from the computer industry. If you remember, Sun stands for Stanford University Network. It was a spin-out of university technology that became a private company. And what is Bill Joy doing today? He is a partner in a venture capital firm called Kleiner Perkins. This is one of the leading venture capital firms in Silicon Valley. In his career, he has gone from academia to industry and then to venture capital. His point is that no matter where you are, most of the smart people work somewhere else. They do not work for you.

[13]

This becomes the starting point. **How do you innovate effectively in a world where most of the smart people are somewhere else and do not work for you?** This gets us to a different model. It allows for – and is actually based on – the idea that most of the smart people work for someone else. This is the model that I call "open innovation".

You can start with the funnel I described earlier. In the open innovation process, you drill holes in the funnel so ideas can flow in and out of it, during the journey from the lab to the market. There are now many pathways for ideas to get to the market. One of these is the traditional pathway: your own technology going through your own business channels and your own market. There is nothing wrong with this. This is a great way to innovate when you have the right stuff for your marketplace. But now it is only one path in a more general model. There are many things you do internally that could be more valued outside your business. In the open model, these are allowed

to flow out. You can also combine internally and externally generated ideas that can take you to new markets. There are even things that you can do with external technologies to fill in the gaps in your own business, where you do not have the right stuff at the right time. Also, you can partner with somebody and collaborate to bring in what you need from the outside.

Perhaps the most elaborate approach of all is to take things from the inside to the outside, let them compete outside of your organisation for capital and customers and, if they find something really interesting and valuable to you, spin this back into your organisation. Instead of spin-outs, you think in terms of spin-ins. In the open innovation model, all of these approaches are possible pathways for ideas to get to the market.

In contrast to the logic of the closed model, the open model has a different set of operating assumptions. One is that good ideas are everywhere. Nobody, no matter how good or how big, has a monopoly on useful ideas. You should not fall into the trap of thinking that you know more than everybody else.

[14]

The second thing is that we have to innovate not only new products and technologies but new business models as well. Some of these business models may work better outside your organisation than inside. This also means that we have to change the way we think about intellectual property. Too often people use this concept only to control things, to keep everything for themselves. In the open innovation model, intellectual property has to be managed differently. We want to bring in other parties' intellectual property to combine with our own. Also, we want to let others use some of the things that we are not using rather than keep them for ourselves.

Think of the "not invented here" syndrome. You can hear this at companies that have a proud tradition of internal innovation and technology. We have to bury this syndrome and replace it with a different culture. **We need a culture that says, "Look what I found," "Look what I can do," and "Look what somebody else can do with what we have."**

Today, I read an Internet article about Unilever. The title was "Open Innovation Trumps 'Not Invented Here'". Unilever has published some of the things it is looking for from the outside world. It is doing this to overcome the internal culture of "not invented here". The article goes on to say that the Unilever scientists have been impressed with the ideas that are coming in from the outside. Unilever has excellent scientists. But the company does not have all the smart people in the world. And its smart people are finding that

the ideas that are coming from the outside are surprisingly good. Not all these ideas were known to Unilever; they have learned new things.

We used to think of innovation as being about new products. We used to see it as a job for engineers. This meant that everybody was supposed to support them and let them get on with innovation. I say we need to define innovation differently. It is simply not enough to be inventive or do research in the research and development department. Instead, we have to think about the commercialisation of new technologies and how to meet the needs of customers so they willingly pay us money for what we are doing. This is not only about products and technologies. It is also about business value and business models.

During the break, I met a group of people working in construction. They are trying to convince their customers that it is worthwhile to pay a little bit more at the beginning if it reduces your cost of ownership later on. Think of energy consumption. If you can build a greener structure that uses less energy, the operating costs of that facility will be significantly lower over time. The customer may have to pay a little more at the beginning but will eventually save enough to make this worthwhile. You see some innovative thoughts here. It is everybody's job to do this.

[15]

All this may sound very abstract. Let me give you a specific example from Eindhoven in the Netherlands. Philips was one of the fortresses of knowledge that used to be very successful with closed innovation strategies. Their high-tech campus is about a square kilometre of real estate. They used to have fifteen hundred researchers there working behind barbed wire, the idea being to keep their knowledge from leaking out. But in 2003, they tore down all the fencing and removed the security. Instead of fifteen hundred Philips researchers, today there are more than seven thousand researchers at Philips as well as other companies. Some of these are corporations, including Philips spin-offs. Others are corporate partners like IBM, Zeiss, ASML, Agilent Technologies, and Cascade. They also work together with research institutes, public and private, as well as consulting and service organisations. They are all located on the same physical campus. It is a great way to understand open innovation visually. They still have their internal research team of more than fifteen hundred people, but now they are intermixed in a broader ecosystem of more than seven thousand people working alongside them. They have only one restaurant on that campus, where they all mix.

You find this idea at other companies as well. There is a movie studio in California called Pixar. They have all their bathrooms in the

same area so that people mix there. This is the idea: you attract people to common mixing places and then, hopefully, you get the magic that comes from that close association. What this does for Philips is that it greatly expands their innovative capabilities. It broadens their intake of ideas. They no longer rely on fifteen hundred researchers; they have more than seven thousand, potentially feeding ideas into Philips's processes.

They also have ways to take internal projects out to other markets. This is particularly important for Philips because a few years ago they made a strategic decision to get out of the electronics business. This is a company that has more than eighty thousand patents, many of them in electronics. Philips has become a household name. Yet they realise that this is becoming a commodity business and they do not see a way for them to grow their revenues and profits. As they exited the consumer electronics business, they had a lot of research and development projects that had nowhere to go inside the company. As a result, they created a variety of processes to take them outside. They also adopted a number of new techniques to manage this much more open innovation process.

[16] One of these approaches is the idea of working with outside partners to search and scout for external ideas and technologies to bring things in. You may have heard of the companies Nine Sigma and InnoCentive. These are professional scouting organisations that have built networks of hundreds of people who are members of online communities. You can present them with a problem and ask for solutions. The business of these companies is to help you hunt for answers.

Another thing is the so-called "co-creation platforms": spaces where customers and research and development staff come together to create new solutions. This is an opportunity for researchers to find out what customers want and what their own environment is like. As for the customers, instead of describing their problem to the sales people, who then take it to the marketing people, who then take it to engineering and research and development, they do not waste time in that process. Now customers are face-to-face with the researchers. This is a much more powerful way to stimulate innovation.

Now let me give you an example from IBM. In its heyday, that company was one of the best in the vertical integration of internal closed innovation. IBM used to be the Bell Laboratories of the computer industry. They invented the disk drive and all the fundamentals in that industry. At that time, I worked for a little start-up company called Quantum. It was growing faster than IBM even

though IBM had much greater capabilities, more money, and a much better brand. Despite all their advantages, we were beating them in the marketplace. How was that possible?

It is not about the technology but about the business model. The business model that IBM employed in its storage business before 1993 required that every IBM storage product went into an IBM computer system. IBM did not sell any of its storage products to anybody else under any circumstances. So even if IBM had better stuff, most of the world could not buy it. That was a great opportunity for Quantum. We decided to let all the other computer manufacturers buy our products and compete against IBM. Our company could not stand up against IBM on its own. But allied with the businesses of IBM's competitors, we were strong.

In 1992 IBM had a near-death experience. They had their first massive loss in revenues and profits and laid off thirty thousand people. The company was almost broken up at the time. Then, for the first time in the company's history, they brought in a chief executive officer from outside. His name was Lou Gerstner. He stepped in and changed many things at IBM. One of those things was the business model. IBM unleashed its marketplaces, not just for its storage products but also for its semiconductors and software. This new model was much more difficult for a company like Quantum.

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At the top of the stack of their value-added activities, IBM created the most powerful business innovation model of all: IBM Global Services. For the first time, IBM said, "You know what, Mr Customer? You have all the computer gear, all the software and hardware, from companies all over the globe. What a headache for you! How do you keep track of all that? With IBM Global Services, you don't have to. If you let us, we'll manage it all for you. We'll take your people and put them on our payroll, take that computer gear and put it on our balance sheet. We will manage it for you." Today, more than half of IBM's revenues come from this new business model.

If we put IBM in the funnel, we will see some interesting things. In the past eighteen years, IBM has led the world in terms of patents from the US Patent and Trademark Office. Obviously, the company must have invested a lot of money in internal research and development to generate all these patents. Open innovation is not about outsourcing your research and development to somebody else. IBM has continued to invest in internal research and development, but they now use a lot of external technology as well, in addition to what they generate internally.

Many of you are familiar with Java and Linux. IBM does not own or control these products. Yet they have more internal staff working

on Java and Linux projects than any other single company. Why would they do that (other than to annoy Microsoft)? What is the point of putting so many of your staff on a project that you do not own? By doing so, IBM utilises an open-source business model. This is good for all that equipment IBM Global Services is servicing across the world, because Java and Linux are modifiable by a company like IBM. IBM can improve these products. In turn, that will lower the cost of IBM's own services. The company is not simply being magnanimous in supporting these products. In fact, it does this to reduce its own support cost. This is an example of an open-source business model.

The final point to make on this is that IBM no longer restricts the use of its technology to its own systems. Just as they support other people's equipment, they also license a lot of their intellectual property to others in the same business. For example, a lot of companies in the semiconductor business use IBM inventions. IBM makes more than a billion dollars annually in royalties. That provides a lot of cash for research and development. This generates more patents, which in turn generates more royalty income. This is another way of sustaining investment in internal research and development by being more open with the output.

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There are two general functions in this open innovation model. One is outside-in: letting external ideas come into your innovation process at various stages as you get closer to the market. The second half of the model is the inside-out part: allowing discoveries to go out to other companies.

Since some of you come from the academic world, I want to show you what open innovation looks like from an academic viewpoint. In the book I published in 2003, there is hardly anything on this subject. Today, we find hundreds of articles out there. Some of them are in the management sciences and some are in the social science journals. Even the natural sciences are now interested in this concept. This is clearly beginning to spread from business to other fields. There is a discussion going on in pharmacology on whether open innovation is the future for large pharmaceutical companies. There is a journal called The International Journal of Co-Creation and Design in the Arts. I suspect most of you have not heard of it. They publish articles on open innovation processes in the domain of art. This makes me think of Danica Purg and the Bled School of Management, which emphasises the importance of art in management.

I have tried to be very clear about what I mean by open innovation, and I have given you examples. Still, there is a debate on

what the term really refers to. What I have in mind is the use of purposive inflows and outflows of knowledge: to accelerate internal innovation and expand the markets for the external use of innovation, respectively. These are the inside-out and outside-in processes: the flow of knowledge in both directions. Another concept is built much more directly on open-source software. Baldwin and von Hippel call it "open collaborative innovation": "An innovation is 'open' in our terminology when all information related to the innovation is a public good – nonrivalrous and nonexcludable." As you see, there is some discrepancy in these concepts of open innovation. A similar concept, then, exists also in the field of open-source software. Perhaps it is not surprising that we have it in management, too.

Now I want to shift to the final area covered in my new book. It is about open services innovation. If nothing else, I guarantee you that it is a great cure for insomnia. If you have trouble going to sleep, one chapter will do wonders.

Product lives are getting increasingly shorter. Companies that develop new products are working very hard, but they find it increasingly difficult to make enough money to sustain further innovation because the life cycle of products is getting shorter. I [19] experienced this in the disk drive industry. In the 1980s, if we designed a disk drive, we knew that we would have a market for years. In that way, we could make a profit and invest in the next generation of products. By the time I left the disk drive industry in the early 1990s, that three-to-four year life cycle had been reduced to six to nine months. If we were even two months late in getting a new product to the market, it was better for us to simply skip that generation and move on to the next one because there was no more market profit in the product.

This is happening in many areas. Think of how rapidly cell phones change. If you are a few months late, you are way behind. It is a brutally tough market. This is where we fall into the "commodity trap". Companies continue to invest and innovate, but they no longer get a sufficient return to sustain themselves and go forward. This is what led me to examine services as a way to get out of the commodity trap.

You can look at services on a variety of levels. One level I already mentioned is familiar to many of you. More and more, employment is shifting from agriculture and manufacturing into the service sector. You see this from Germany to China. In the eighteenth century, agriculture provided almost all the employment in the

United States. Today, three to four percent of the workforce supplies food for the entire nation and employment growth is predominantly in services. This is also true of companies. IBM's service business now accounts for fifty percent of the company's revenues.

How many of you remember the Motorola Razr phone? It was an example of how industrial design can create a powerful user experience. It was a great success for Motorola; they sold more than fifty million of those phones. As a result, Motorola became the world's number one cell phone manufacturer. The problem they encountered was the commoditisation of their business. They launched the next generation of cell phones called Krazr. How many of you remember it? Probably not many. By the time they put it on the market, everybody else had learned how to make great designs. Motorola was no longer the only company to produce nice slim handsets. As it happened, Nokia overtook Motorola with its clam shell design. Motorola was also surpassed by Korean and Taiwanese companies and dropped to number seven in a very short period.

However, Nokia also fell into the commodity trap. They did a lot of things right. Are you familiar with Michael Porter's work on competitive strategy? Nokia was a perfect example of how to execute Porter's strategy very effectively. They achieved the world's number one low-cost position and the highest volume anywhere in the world. They had global manufacturing, including in some of the emerging markets, and global distribution. And they had a very good brand. They really did a lot of things very well. Despite all that, they fell into the trap. Their trap was a little different. The way that people use cell phones had changed. That happened partly because of the advent of the iPhone. More generally, it changed because the younger generation no longer use cell phones primarily for phone calls. They now use them for texting, downloading video, updating their Facebook status, tweeting and all sorts of things that are not prominent in the environment Nokia was trying to serve. When the whole basis of the competition shifted, a whole new set of competitors came in and Nokia got flatfooted. Now they are working with Microsoft, trying to get into the game again.

What do you do to get out of the commodity trap? In summary, the escape route involves a number of pathways: wrap services around your products, turn products into solutions, co-create innovations with your customers, use openness to get more from specialisation and build platforms to attract others to add to your solutions.

You should not think of your business as a product. Think of it as the solution to a customer's problem. In that way, you will broaden

your view and become more resistant to commoditisation. This is not the same thing as innovating products and services. There is an academic debate on this, and I have shown you one side of that debate. The other side is in the footnotes of the book you will get.

In 1985, Michael Porter published a book on competitive advantage and introduced the idea of the value chain. It is a very powerful idea, which has become very widely adopted. The basic concept is that companies add value in competitive strategy. You have a set of processes that take in materials, create great products and ship them out to the market. You also have support functions up above. At the very end of the chain there is a little thing called "service". In Porter's model, service is the last thing that a company does before the product is shipped out. You win on the basis of products that are low-cost or provide the best performance.

At Quantum, I was responsible for our service organisation, among other things. We saw service as something that would keep the customer from returning the product to us. If we could make the customer keep the product, we could book the sale and get a gross margin. A gross margin on the product was the way to make money. We did not charge for our service. It was there only to keep the gross margin. The accounting department would have told you that the value contributed by our services was zero. This turns out to be a short-sighted way to look at services if you want to stay out of the commodity trap.

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I suggest another way to think about it. Replace that value chain idea of 1985 with something that is more iterative and cyclical, centred on creating a better customer experience. Whether that is in construction – getting customers to think about the total cost of ownership rather than the initial price – or cell phones – thinking about the experience itself and the services people can access with their phones – the customer experience is always at the centre.

Some of this activity takes place inside your own organisation. Other parts happen in the surrounding ecosystem. Because services are more intangible than products, you have to work closer with the customers to find out what they want. One of the things I stress here is that you have to try to design "experience points".

One example is the idea of the service blueprint created by Mary Joe Bitner of Arizona State University. You take an experience and make it much more evident. You look at the physical artefacts that are created in the experience of going to a restaurant. You look at the customers' actions and the decisions they make. Then, you also look at onstage and backstage employee interactions with the

customer, and the infrastructure that supports these interactions and helps the customer through the process. Think of all this in terms of trying to take an experience and make it more tangible. You can then think of more innovative things to improve that experience.

This is not a new idea. Danica told me that you had Peter Drucker talk at the school's tenth anniversary. He said that when a customer buys a product, he is not really buying the product itself but its utility: what the product does for him. Ted Levitt, writing at the time that Michael Porter was writing, put it this way: A customer does not want a four-inch drill; he wants the four-inch hole that he can make with the drill. A drill is just a way to make that hole.

What I call "customer experience" is the utility the customer derives from the product. This is not a new idea. But there is not much customer experience in the value chain concept. The customer is mostly outside the value chain process. It is time to put the customer at the centre of the process so as to avoid the commodity trap.

An example of this comes from Rolls Royce. They make aircraft engines that sell for tens of millions of British pounds. The engines require massive capital investments. Rolls Royce does something very interesting. They have adopted a business model called "power by the hour". Instead of paying tens of million of pounds for buying one of these engines, you can buy the power by the hour. The company takes a fixed cost and turns it into a variable cost.

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Why would Rolls Royce do this? Aircraft engines have a useful life of about thirty years. Most of the profit from an engine is not made at the time of the original sale because there are only a few customers and they have a lot of bargaining power. You cannot get a large margin at the outset. But since that engine is going to be in use for thirty years, it needs a lot maintenance and spare parts during that time. There is a lot of profit to be made in that useful life.

Now, a lot of people know this, including Rolls Royce's engineers and technicians. After working for the company for ten or fifteen years, they retire and become independent practitioners who go out and service these engines. They use the same manuals, the same tools and the same training, and they underbid Rolls Royce by thirty percent. They do not have all the overhead that Rolls Royce has. As a result, that profitable tale of thirty years has to be shared with a lot of independent practitioners.

You can imagine that Rolls Royce was not exactly thrilled about this. So what could they do? They figured out that they did not need to try to sell their expensive engines. The customer did not have to

pay tens of millions of dollars. Instead, customers would rent the engines and Rolls Royce would service them. With these new contracts, there is no room for independent operators. Suddenly all the service comes back to Rolls Royce. It is a very creative way to redefine the landscape and find ways to get more profit out of the overall life of the engine.

This is not true just for engines. Think about automobiles. The power-by-the-hour idea could be applied to that business, too. I drive my car about twenty thousand kilometres a year. Sometimes I go fast on the highway, perhaps a hundred kilometres an hour, but in the city I go a lot slower than that. I probably average fifty kilometres an hour for those twenty thousand kilometres. Simple math shows that I drive my car about four hundred hours a year. Now, there are more than eight thousand hours in a year. I have to pay for the car and all the service, the insurance, the parking, the garage and everything else associated with it. I cover the full cost of an asset that I use less than five percent of my time.

This suggests the possibility of pooling that asset with others so that its overall utilisation goes up while the fixed costs are spread over more customers. This is the idea behind the services that are being pioneered in many places. One of these is in California. It is called the Zipcar. Another was launched in 2008 by Daimler in Ulm, Germany, and in 2010 in Texas. It is called Car2Go. It uses electrical vehicles equipped with global positioning systems. This means that you can see exactly where each of the vehicles is currently located. You do not have to have a reservation. There is no deposit, no up-front cost and no specified return time. You just go to the car, use it and return it somewhere in the city. Thanks to the global positioning system, the company knows where you left it. They can service it and refuel it if necessary, and it is then available again in case somebody else wants to use it. The idea is to make vehicles available to more people, turning what used to be a product into a service.

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This is also true in the business-to-business sector. There is a company called UPS. In the old days, UPS would take the shipping manifests and tell you what it costs them to send the parcel from one place to another. They would compete against DHL and other carriers, and whoever had the best rates or the best schedules would get the business. Then UPS created something similar to IBM Global Services. They offered to take over the customer's entire shipping department. The real value here came from innovation. Now that they had become shipping departments, for the first time UPS saw everything coming from the customer. That allowed them to work further upstream with the customer into the supply chain. They were

able to work with their customers to design new offerings that optimised the supply chain coming in. They needed the information from all the transactions to be able to do that. Now they saw the entire context. This is what enabled real innovation.

Now I want to talk a little about Amazon. It started out selling books. It stocked those books in its own distribution centres. This was the traditional do-it-yourself vertically integrated model. These days, you can buy all kinds of stuff from Amazon. What you may not know is that most of the other stuff, the things that are not books, is not inventoried by Amazon. Most of that stuff comes from somebody else. Amazon handles the order-taking, but the filling of the orders, the merchandising and even the creation of the web pages is done by others. As a result, customers get a consistent purchasing experience. Amazon offers us more and more things, creating economies of scope, and the cleverest part is that it does not have to carry more inventory to provide us with all these choices. It is the third-party merchants who take care of that. As a result, more and more people go to Amazon to buy goods, as it is a more attractive Internet destination when shopping for many items.

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Also, if you are a retail company, Amazon is where you want your goods to be because that is where customers are coming to buy. This creates a virtuous cycle. There are more and more choices, attracting more and more merchants. This makes it more and more attractive to customers and they spend more money buying stuff that way. Amazon shares all its internal design tools with their third party merchants. This is what creates economies of scope.

The other part is creating economies of scale. Amazon generates a lot of activity. It turns out that you need a big internal infrastructure to handle all that activity. A few years ago, Amazon had a new idea: "We can rent out space on our infrastructure to other companies and host their websites." Why would Amazon do this? In the world of Michael Porter, this is one of your key assets and you do not want to share it, certainly not with any of your competitors. In this dynamic and open world, however, sharing your infrastructure with others reduces your fixed costs and becomes a profitable business for others: they pay only for what they use. This is very much like the power-by-the-hour concept. If you work with Amazon, you use their web services and, as a customer, you pay only for what you have used. You do not have to hire a manager or build a facility. All those fixed costs are covered by Amazon because it increases the utilisation of their assets, which reduces their costs. This is becoming a very powerful new business. By opening up, you get both economies of scope and economies of scale.

Let me close with this. Whether you are talking about products or services, enough companies have tried open innovation that it is clear that it really needs to be seen as a journey. You cannot just walk out of here and say, "All right, Professor Chesbrough convinced me. I am going to become open!" A lot of companies have tried this. They have found that there are at least four stages in the journey toward becoming more effective in managing open innovation.

As you might expect, the first stage is experimentation. You have to try it. Ideally, you should try it on a small scale on a particular project. You can manage the transition and see what you need to do differently. You are going to find problems and difficulties along the way. Do not assume it is going to work well the first time. Most companies find that it does not work. It will take some time and some changes in your company and in your processes to make it work well for you.

However, in the second phase you begin to commit to it. You say, "OK, now that we have done some experiments, we know that it can work in our organisation if we do certain things. So we are going to continue." This is when the commitment stage begins.

During the third stage, you feel comfortable with open innovation and start expanding it. And the last stage is when it truly [25] becomes part of the organisation's DNA. As you can imagine, that will take some years.

Open innovation is becoming a big idea. When I first wrote my book, I found two hundred links to the concept. I did a search last spring and found 483 million. It is clearly becoming pervasive. I did a search in LinkedIn, too, and found companies ranging from chocolate manufacturers to defence contractors that were looking for people to manage open innovation.

If you want more information about open innovation, including electronic copies of all my papers, you can find them at http://openinnovation.berkeley.edu. For those of you who are Twitter fans, we have twelve thousand followers now at Open Inno.

I appreciate very much your attention, and I look forward to the round table after the break.

EXPERT PANEL WITH BUSINESS LEADERS

Wilfried Grommen
Account Chief Technology Officer, Public Sector EMEA, HP

We have learned from Professor Chesbrough's presentation that smart people can be found not only where we are, but everywhere.

We have three panel members. Two of them are in highly innovative businesses in the information technologies sector. But, it is also noteworthy that two of the speakers are entrepreneurs as well. I have observed that there is a very close relationship between entrepreneurship and innovation. This means that we can expect a very interesting discussion.

We all know that technology never stops developing. There is always continuous innovation taking place. Professor Chesbrough demonstrated that business models are also constantly evolving. There is a third trend, too. In the past five years, 2.5 billion people have joined the Western world in the sense that they have moved from a pre-development period to a modern service-oriented society. This trend is quite pronounced in China, Brazil, Russia, and other emerging economies.

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Thanks to rapid developments in the information technology sector, there is no discrepancy between "me at home" and "me at work". It is the time of the prosumer. This blurring of boundaries defines a completely new playing field for the information technology sector and the way it deals with innovation.

There has been another big evolution in information technology. When we think about companies in that sector, we think about personal computers, software, and networks. But information technology is not about that anymore. People nowadays engage in diverse activities such as auditing, research, pro-active marketing, etc., all related to analysing data. As a result, the whole emphasis in the IT sector is on the 'I', and not on the 'T' anymore.

The third important highlight, from the perspective of innovation, is the idea that information technology has become a utility. You get plugged into a world of information. We are always "connected". At a rapid pace we are arriving at what people call "the Internet of things".

Innovation is not just nice to have. It is not confined to a company's research and development department or a joint project with a university. Innovation is a culture; it is a state of mind. I always compare it with the Toyota production system. The Japanese gave us quality systems (Kaizen) and continuous improvement. That is what innovation is about: it should be a culture, like quality management.

Hewlett Packard has a lot of innovation assets. It started in a garage, and the company is very proud of that humble beginning. I am telling you this because we have recently started an internal project called "the garage". It is a crowd-sourcing application that can be used by the whole company to funnel ideas. They are subsequently analysed and prioritised. Today's garage consists of web-based tools that people can use to get their ideas assembled. A nice analogy, or journey in innovation.

At Hewlett Packard, we have innovation centres to brainstorm with our customers. We are working on a corporate social responsibility project called "social innovation". The idea is to figure out how technology can be used to do good things for the world. So, innovation goes far beyond new products like new iPods and iPhones.

I would like to conclude with some examples of what we see as successful actions of open innovation. The first one is company culture. We have been doing many things to optimise what the company does, and how. For example, in the past five years we have reduced our number of data centres from three hundred to six. This is a strong process improvement and example of innovation.

The second example of innovation is, of course, our portfolio. We must constantly deliver new products to the market. Most people think of that as innovation.

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I would also like to stress a third point. Most successful innovations stem from cooperation between a company and its customers. It is good to have a process for that. At Hewlett Packard, any account manager that handles large accounts does business value analyses of the customers and, together with the customers, must write a joint innovation plan. The idea is to figure out how information technologies can help our customers achieve their goals. Thus, the way we deal with large customers is predetermined in such a way that it must include an innovation plan.

We also have innovation centres where we do co-brainstorming. For example, we have Procter & Gamble managers working at our innovation centres in order for us to achieve cross-fertilisation. What's more, we are organising an innovation centre at ING Bank, which is one of the most successful banks, with its headquarters in the Netherlands. In that way, they can work on innovation with their own customers in the same way that we do.

I think that this gives a good idea of what open innovation means at a company like ours.

As you know, computer-animated design is a big business in the entertainment industry. Think of all the films like Shrek, Madagascar,

and Kung Fu Panda. We work together with DreamWorks and everyone knows that you need extremely powerful computers to make such films. To help them, we created a cloud infrastructure and offered on-demand computing to render the images. This evolved into a shared facility (seed) where this "on-demand computing" is offered to various design centres in London. This co-innovation was so successful that we even developed a joint studio together for videoconferencing, to avoid travel. The result of this studio and IT expertise was a product named HALO, a perfected videoconference infrastructure. And this product was sold to Polycom, another company in the media sector. I think that these are good examples of co-innovation with customers. It leads to better service and cost optimisation. Finally, it can result in the profitable sale of a product to another company.

Jožek Gruškovnjak
Director, Emerging Markets, Internet Business Solutions Group, Cisco Systems

Good morning. Has anybody heard of Cisco? Our CEO John Chambers often says that we are the most important company that nobody has heard of.

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I actually come from a small group of about one hundred fifty people within Cisco called IBSG, or Internet Business Solutions Group, which is the strategic and consulting arm of the company. We work with companies and public sector entities and try to help them understand what technology can do for them. Innovation is one of the possible themes where information technology can have a large impact.

To be honest, innovation is probably one of the words most often abused at this point in time. If you do a search on the Internet, you get about 4 million hits that contain "open innovation". There are more than five thousand books on Amazon that mention this concept. Everybody is talking about innovation, but when you ask them what it is about, they just say, "Oh, it has to do with getting an idea."

It is not just about that. Of course, it is about getting an idea, but it is also about bringing them to life. It is basically about the process of an idea's execution, from its inception to an actual new product or service. You can get ideas from many sources, but the process itself is really critical. Let me give you an example.

Imagine somebody needs to improve his health though exercise. An elliptical trainer might sound like a good idea, especially if your knees are in a bad condition and you cannot go jogging. It really seems like a good substitute. So the IDEA is here. I myself liked the idea and I actually bought an electrical trainer – so I adopted the idea - and today

the elliptical trainer is standing in the middle of my living room as a monument to good health, but I cannot remember the last time that I used it. Where did I fail? In the execution... So, it is not only the idea that matters but also the process of bringing the idea all the way to execution.

At Cisco, we try to collect innovative ideas from different places. We have a research and development department. This is absolutely necessary as there are certain technological advancements that cannot be obtained from the open market. Last year we spent 5.8 billion US dollars on our internal research and development, which was about twelve to thirteen percent of our revenues. However, we are also open to other sources for ideas. I think that we are one of the most successful companies in terms of acquisitions. We do not acquire market shares. We acquire intellectual property. Ninety-five percent of all of Cisco's acquisitions were small companies that had a new, innovative product, solutions or just concepts, which we used to either expand or enhance Cisco's products and services.

There is an abundance of ideas out there, but how do you find the good ones? We use a lot of different methods. However, once you have obtained something through the filters, you enter a very difficult period: incubation. How exactly do you capitalise on the selected idea? Do you set up a business unit? And how do you get to the market? We have seen too many cases of people with an idea who create a new product, and then go to the market in a way that we refer to as the "spray and pray" model. This is: creating a product, advertising it, and hoping that somebody will buy it – also known as the "build it and they will come" model. We believe that you have to approach the market in a very focused way, with a clear understanding of who your initial early adopters are, and you have to move forward from there once they have successfully adopted the new product or service.

You also have to be able to "kill" ideas that do not work. It is hard for people to accept that their ideas are not good: "Are you telling me that my baby is ugly?" Well, yes, sometimes it does not even have arms and legs. The implementation of such ideas should be stopped, with resources being redirected to more promising ones.

Innovation starts with an initial idea. Then you develop a product or service, push it out into the market, and enhance it. This is a circular path. Analysts have been predicting that Cisco's products would become commoditised since the time that I joined the company fifteen years ago. However, because of our cyclical innovation model, we have been able to continuously enhance our existing products, something which has helped us maintain gross margins of around sixteen percent – very high

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compared with the rest of the industry. We would not have been able to do it without constant innovation.

The beautiful thing about open innovation is that we have the tools to facilitate it today. As Wilfried told us, there are existing information technologies which help us practice open innovation. Just look at the Internet. It has evolved from sharing information to being a collaborative environment. At Cisco, we have an internal blog called i-Zone for employees to launch ideas, not just about new products, but also to improve processes. There is not a single thing that you cannot innovate on. Everything is up for discussion. On i-Zone employees submit, review, comment, work together, etc. In summary, they participate in the entire process of innovation.

We also have a system for external innovation called iPrize. Teams in the community can debate ideas and act as a first-line filter, enhancing or killing ideas and moving forward. This process can start with a few people working on a particular idea, but in the end there can be fifty or more. We usually try to have two competing teams work and present the potential of the same idea. Why? So that hope does not die.

The winning team –the team that clears all the hurdles with its idea - gets 250,000 US dollars as a reward, but the real prize is the seed capital to create a business unit and bring an idea to life as a product or service.

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Information technology is fundamental for building a platform for open innovation. It enables you to reach way beyond the borders of your company. But it is not enough. You also need a different culture – one where everyone has the right to contribute; where they have the right to make a proposal.

I once listened to Gary Hamel talk about a company in a very niche market: creating and rendering sceneries for military trainers. You can imagine that this was a very small niche. They were brainstorming how they could expand their business and a secretary suggested that they sell what they did to the gaming industry, and they actually did it – with great success. It was not an engineer that came up with this idea, but an administrator.

Another important thing is that you need to stay focused on customer needs. Many great ideas actually come about from a thorough understanding of customer needs, and these ideas typically have the best chances of succeeding. Besides that, this focus on customer needs provides a central anchor for the innovation effort, which helps us not to stray from the things that are really important.

Finally, you have to set up a culture of collaboration. Open innovation is based on collaboration and open sharing. A lot of companies have not

done that; they are unwilling to share. But working together with others is absolutely essential for success in today's open economy. I cannot stress that enough.

Does this whole algorithm work? At Cisco it does. And we believe that it can work anywhere. At Cisco we have launched a project called the Global Exchange for Growth, connecting several innovation hubs around the world to an open collaboration platform. We firmly believe that the next generation of innovation centres and business innovation incubators should be borderless. People should be connected, and collaborate to solve problems.

We are also seeing a lot of open innovation in the public sector. However, empowerment, a focus on customers, collaboration, and a process must all be in place for open innovation to be successful. This is often a challenge in the public sector.

Sandi Češko
Founder and Chairman, Studio Moderna Group

Studio Moderna is celebrating its twentieth anniversary this year. Today I will tell you how what was a garage company twenty years ago has grown into an organisation that now employs more than six thousand people, has become a dominant multi-channel retailer in Central and Eastern Europe, and sells its products and services all around the world, from Japan to the United States.

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I would especially like to share with you two things that I have learned in my life. The first is this: if you do not understand today's world, don't worry. It's not your fault, because it is impossible to understand today's world in every way. The speed of change is so fast that it is impossible to bring things into proper focus. So, we have to be able to live with these fast changes.

The second thing I have learned is that you should not assume anything. You can make terrible mistakes if you base your decisions primarily on assumptions learned from previous experiences. It is better to forget everything you previously knew and approach things as if starting with a blank sheet of paper.

Back in 1992 I initially refused to distribute Kosmodisk – our anatomically designed belt for back pain. My partner could not convince me, but luckily I listened to our test users (since then we have sold several million units).

In 1994 my business partner tried to convince me to start a home shopping business. My first reaction was "no way"! I thought this was a business for criminals. Two years later, we decided to conduct a test,

which we did in a very professional manner. It was successful, and we started to grow along with the expansion of western TV stations in the region. With home shopping, we moved from being a product-driven company to being a retailer – a distributor of American consumer products. This was our first big transformation.

In 2000 we approached IBM and started selling their Aptiva computers, models which were built for home users. At that point, I began to fully realise the power of brands, and we started working with other brands as well. In 2002 we began to sell mattresses under our own brand name, Dormeo. But those who see Dormeo as just a product are missing something; we see it more as a service. That is the key difference between us and our competitors, and it explains why we have between ten and forty percent of the market share in most of our markets. It is not because we carry unique products. Nowadays, anybody can make a good product. The key is to turn the product into a service. You must be able to explain the advantages of what you sell, and how you are going to support and service your customer. Information about your offer should be available across all media platforms and your products should be available through all distribution channels.

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In 2005 we began approaching investors, telling them that we had been experiencing twenty-five percent annual growth and that we intended to continue growing, but that we needed capital to do so. They asked us how we were planning to achieve this continued growth since, up to that time, we had been relying on geographic expansion, and had been launching products in two or three new Central and Eastern European markets in each year. We told the investors that our next direction would be the leveraging of our platforms and the creation of a multi-channel and brand strategy. We had made that decision after realising that the era of constant growth through expanded production was over. New growth could be generated only by means of quality enhancement.

What does quality mean? It means putting the customer at the centre, and providing him or her with true convenience. It's not just about the product, it's about service, convenience and transparency. This is our competitive advantage. Our products are not cheaper than those of the competition, yet retailers around the world find them to be more efficient. In this way, we have been able to achieve the highest growth in the history of the company, even without the addition of new markets.

Information technologies are another key advantage for us. Over ten years ago we started the project of digitalising all our business processes so that senior management could have control over everything. Then we realised that the power of digitalisation is not to gain top-down control, but to give all the decision makers in the company, from the retail shop

to the CEO, the possibility of having control over their business and the results of their activities. Today there are over one thousand users of our intelligent business applications.

Marketing; our strength is in driving demand in whichever markets we are present; not just in CEE, but also outside, where the bulk of distribution is organised via other retailers. We have great initiatives in marketing, and we do not simply offer retailers innovative products, we offer them complete solutions. So, we are not looking to "jump on their train", so to speak; we are inviting them to join us on our train, where we are successfully growing demand by managing marketing risks.

You have to remember that there are no middlemen anymore. You are in direct contact with the consumer. And we do not own our brands anymore. The success of the brand depends on the consumer's satisfaction with the service and with the company's attitude in general.

It could be that the key to faster growth is not just domination, but smart cooperation. We approached a leading Italian internet retailer - the Banzai Group. I asked them if they were planning to expand to Eastern Europe. They said they had no such plans, nor the budget to do it. I asked them to give me their know-how in exchange for a stake in the company that I would set up in Central and Eastern Europe. This model of cooperation is very successful and has gone beyond on the logic of open services innovation. Today, I am using their know-how in our region, while they are using mine in Italy. They have given me their contacts from around the world, and I have given them mine. We do not charge each other for that. We are just doing what we think is right and fair. We have become stronger by empowering one another.

The focus on solutions, rather than products, is perhaps best exemplified by the way we present the most modern folding bicycle. We present it as a solution to some of the problems of modern cities, and explain to potential business partners what they gain from putting this bike in their car trunk, hotel lobby, or in the hands of their employees. We also explain to companies how they can make more money by using it.

Here is another example of the radical transformation from a typical product-driven company to a service provider. You are all familiar with BMW. Two years ago they declared that they did not want to merely remain a synonym for a car manufacturer. They wanted to become a leading mobility provider.

If you are in the B2B sector, what is important today is not only how good your product is. What matters even more is your relationship with your partners. It is not enough anymore to sell them the best product. You have to educate them and give them solutions. Their biggest

nightmare is that they don't even know what they don't know – but they should. If I can explain this to my partners, we all win.

How radical are the changes? A CEO of a company making games for our cellular phones told me that if somebody presented an idea to their board that was not absurd they would not even consider it. This illustrates how radical, how bold you need to be in your thinking today.

Iztok Seljak
President, Management Board, Hidria d.d.

I would like to thank the IEDC–Bled School of Management for inviting me to this forum. It is always a pleasure for me to be here. However, it is also a challenging task to address this audience. On top of that, the other panellists and I were announced as hidden champions. But, after a public announcement of that kind, you are not hidden anymore.

I guess I look like a dinosaur, one of the few remainders of the so-called "real world" in which tangible goods are produced. But, I am going to argue that we are not quite as close to extinction as some people might think.

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At Hidria, we are introducing embedded business model innovation processes. They ensure the continuous, systematic, proactive, and dynamic flow of business model innovation. We have gone through two main stages. The first one took place approximately ten years ago. At that time we decided that we did not want to copy others and be a low-cost company. We wanted to be creative.

We wanted to improve the world. That was when we started talking about innovation and proclaimed it to be our core value. In 2004 we formulated our mission as providing global breakthrough innovation to improve the standard of living for mankind in the two fields where we operated: sustainable green mobility, reflecting our involvement in the automotive sector, and providing in-door well-being, related to our ventilating, air-conditioning, and thermo-solar and photovoltaic businesses.

Our first step was to build a "closed" innovation system. In the past five years, we have built three institutes, investing 25 million euros. We have over one hundred engineers, PhDs and Masters of Science. The most important thing is that we are no longer talking about discovering or understanding the future, because we do not think that the future is sitting somewhere, waiting to be discovered. It is something to be created. We are talking about the trends and factors that will very likely influence that future and, keeping in mind these influences, we are discussing what a better future should look like. We are asking ourselves what we

can do to contribute to the creation of that future. This involves technology and product roadmaps.

We were financially successful, and our revenues in the automotive sector grew from 15 million euros to 50 million euros in only three years. Yet around 2007 we started pondering some very important issues. First, we had excellent technological processes and excellent products. But we figured out that despite our excellent financial situation and market position, we did not have a critical mass of knowledge inside the company. We had perhaps ten percent of the knowledge we needed, whereas the remaining ninety percent was somewhere else. At that point, we felt the need to reach out for that knowledge. The reason for that was more than just Professor Chesbrough's book on open innovation, which landed on my desk in 2006.

The second thing that we figured out was that although we were a production company and our main expertise was in product technology processes, the largest value was to be found in the other parts of the value chain. It was in purchasing, logistics, sales, and marketing channels, perhaps even in the financing of what we did. That is how we acquired an obsession with business model innovation. We wanted to put in place what we now call "embedded business model innovation". We needed processes that would ensure that this was not just a random, coincidental thing, but a systematic, proactive and dynamic approach. We also wanted everybody to be involved in it. Consequently, by 2011 we had moved from 50 to 150 million euros, i.e. from 15 to 150 million euros in seven years.

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Let me share just a couple of examples illustrating exactly what we did. In terms of technological innovation, a couple of years ago we started developing solar air-conditioning. We use forty percent of our fossil fuels in buildings. A large part of that is linked to air-conditioning. We are trying to use the power of the sun, converting it into air-conditioning for buildings. We use a combination of photovoltaic and thermo-solar approaches. We have been working together with a Slovene university and their scientists, who are very good in breaking down the solar spectrum. This is very important for what we are doing. There are also two Slovene companies that have been able to prototype that idea, and we are collaborating with them in an open business innovation model. Imagine what impact our new cooling solutions could have on fossil fuel consumption and carbon dioxide emissions! We envisage a five to ten percent decrease worldwide.

In 2008 we started a project in the automotive industry. We have diesel cold start systems in the heart of the internal combustion engine chamber. We realised that we could construct a smart glow plug that

could reduce fuel consumption by ten percent and help cut global carbon dioxide emissions by one or two percent. It should be on the market in two or three years.

The most interesting thing is, we discovered that the crucial knowledge necessary to develop this device was held by an aeronautical company in France. That company had been cooperating with our competitor. Despite that, we borrowed the basic idea from them and we motivated some of their engineers to such an extent that they left their jobs and set up a small firm which is now working for us on this project. We also found that we could collaborate with a German and Japanese company with a relevant competence. We now have thirty engineers working on that project in Slovenia, France, Germany, and Japan simultaneously. The final results should be on the market in 2014.

So much for technological innovation. We are also obsessed with business model innovation. What can we do in that respect? We say that we sell complete indoor air-conditioning solutions, while we are still actually selling components. We started to think about how we could approach the designers and the architects to explain our strategy to them, but we concluded that this was not possible, given the current structure of the market. Then, we began to think about how we could change the market. What could we do to modify the structure of customers, and even generate additional business, so that our partners would accept our new role?

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That open innovation project started here, at IEDC, in October 2010. I moderated a roundtable like this one, with colleagues from a big construction company in Serbia and some Bosnian business people. We talked about the position of the construction business in the countries of former Yugoslavia. As these companies had some massive construction projects going on, we decided that we should bring them together. With the support of presidents Türk of Slovenia, Tadić of Serbia, and Izetbegović of Bosnia, we created a consortium called Feniks. It brought together forty-five construction companies from South-eastern Europe which employs 35,000 people and generates five billion euros of sales annually. It is now involved in several large-scale projects in the Russian Federation including the Skolkovo project, which is expected to become a Russian Silicon Valley in the future.

To conclude, I think that the most important aspects of open innovation are openness and forgetting everything that was done in the past.

Wilfried Grommen

To summarise what we have heard, innovation is a type of culture. It involves values and embedded processes. It also involves services,

partnerships, and creative business models. There is a strong focus on customer experience and quality. Innovation may even be achieved by stealing ideas from others. This is not a joke. We have been told that it can really work. The entrepreneurs on the panel have shared some very powerful testimonials with us and we have learned some very interesting things. Now the floor is yours.

Matej Rajk

I work for a Slovene text start-up called Printbox. We produce printing solutions that you all will be needing very soon. I also participate in a youth organisation called Mreža Idej (Idea Network) which tries to motivate young people to find solutions in society. I would like to thank Mr Česko and all those who have cooperated with Mreža Idej, or will do so in the future.

My question is how you see the open innovation concept with respect to society. We need this concept to create a better and more optimistic social atmosphere. However, it is not enough to know what to do. We have to take specific actions.

Henry Chesbrough

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As a student and researcher of innovation, I learn a great deal from young people, including my students and my two daughters. In some cases, young people teach us, rather than the other way around.

More to the point, I think that the new technologies that are available, and are well known to young people, illustrate a point made by Sandi Česko. Brands no longer belong to their owner but to the people that use them. The experience is becoming much more participatory. Social media technologies allow much more rapid engagement. The manufacturers are a little scared, as they do not have as much control as they used to. The experiences of the customers are in their own hands. If they are unhappy, they do not suffer in silence. They mobilise and communicate with others who may have also had bad experiences. This can cause tremendous momentum for changes.

Many of the things that we came to associate with the Arab Spring began from the mobilisation of young people who were communicating through new channels. Some governments wanted to shut down these channels and prevent public unrest from growing. Other societies chose other tactics. They preferred to listen to what was being said. They used the new channels as mechanisms for feedback. This is a real challenge for politicians, as they are not used to getting feedback so quickly. They are not in the habit of being asked for change so rapidly. I think that this is

where we are heading socially. People have better opportunities to voice their discontent and share it with others.

Sandi Češko

Here is an interesting example from a Dutch internet company. They created a social club whose members could communicate to each other about wha they needed and ask if somebody could lend it to them. For example, if you needed a bicycle and somebody was willing to lend you one over the weekend, you could have it and you pay the owner as much as you believed was fair. The internet company only collects a fee if the borrower decides to pay.

Jožek Gruškovnjak

Governments of all levels - national, regional, city, or other - realise that social media can be a good source of ideas on how to improve services for people. But the problem lies within institutions. I have worked in Mexico and Bahrain on web utilisation. The real challenge is moving wonderful ideas into execution.

I think that you need to start experimenting. You can take a few small pieces and show the government how the gap between ideas and their implementation can be closed. That could be a step in the right direction.

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Iztok Seljak

From my viewpoint, we need to take responsibility, each and every one of us. We have to move from observing that politicians and their parties are not doing the right things for society, and criticising them for that, to doing something ourselves.

I am a member of Slovenia's association of managers. We have concluded that since our country has joined NATO, the European Union, and the Euro Zone, we have run out of targets. We are now trying to suggest a new vision and a new strategy for managerial action. We call this agenda Commitment 2020.

I am also involved in an organisation called Summit100 Business Leaders. We brought together 100 business leaders from South-eastern Europe and former Yugoslavia. We proclaimed that our mission was to bring down the borders that were built after the disintegration of that country. We think that we should first of all tear down those borders in our minds, and then remove the physical borders between our nations. Being on our own, we are all too small and lack critical mass. We do not have a big enough market to nurture big players that could subsequently compete globally. To open the region in this way also means

opening it for foreign investment.

I repeat that each of us must start acting. Only then will we be successful.

Branko Žibret

We know that innovation is about creativity, communication, cooperation, and exchange. On the other hand, you are all working in an environment where you talk a lot about management, system support, processes, and budgeting. How do you find the right balance?

Sandi Češko

I will tell you what we do at Studio Moderna. There's a steam-cleaner manufacturer in the United States that has a seventy-five percent market share. But it is not their R&D team that designs new products. All the ideas come from Google, mainly from complaints, and the role of R&D is to meet customers' expectations in the best possible way. Today, you can produce any kind of product. That's not the problem. The problem is to find out what is relevant to your customer. How do you find that out? The company I mentioned keeps track of what people are complaining about on the internet: the water tank is too small, the cable is too short. This is their main research and development strategy; they improve previously existing models on the basis of these complaints.

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Jožek Gruškovnjak

Ideas are nice but, as I said, the key element is execution. You can go for different emphases in your budget, but ultimately it is a matter of balance. It depends on the type of business you are in. That is what determines what is reasonable to spend on research and development versus other activities.

Budgets are a minuscule concern, because it is possible to achieve a lot today with a relatively small amount of money. What matters most is how to organise the collection of ideas, process them, and then go to the market.

Iztok Seljak

I agree that implementation is very important. But, I would also argue that implementation without an appropriate vision is just a daydream. Of course, a vision without implementation is also useless.

In my view, what we lack in Slovenia, and I think this is an issue across the whole world as well, is not good management but good leadership. What I have in mind is showing the way forward and being charismatic, so that you can inspire people to follow you in the chosen direction.

Wilfried Grommen

A few years ago, we introduced the concept of a chief technology officer. But, we heard that innovation takes place in a dialogue with your customers. You need people who are not product-oriented or have their minds focused on a single solution. You need people who can start and maintain the right dialogue, one that can lead to open innovation.

Arnold Walravens

I would like to approach the topic from a different angle. I was inspired by Philips's story, which Professor Chesbrough shared with us. What he did not tell us was that Philips' initial success occurred after they brought a product from the United States and started copying and improving it in the Netherlands. At that time, the Netherlands had not signed any international agreements on patents and protection of intellectual property.

I also remember the time when it was habitual practice for Yugoslav companies to buy a product abroad, analyse it, and start copying it with some small improvements.

I would like to hear a discussion of open innovation and business ethics. My impression is that the more open you become, the more important the topic of business ethics gets.

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Sandi Češko

As we said, it is our customers who now own our brands, and if we don't play by the rules, they will destroy us. We don't need any more regulation. The customers are creating the new rules and they have all the tools necessary to act on them.

Jožek Gruškovnjak

I agree that ethics is an important topic today, and not only within the context of innovation. It is also relevant in general business practices.

As for the relationship between innovation and business ethics, I can look at it from the perspective of my own group. In a nutshell, we are innovative thinkers. We need to have thought leadership and understand which way the customers are going. Business ethics starts with a clear articulation of your mission and what you want to do. You also have to announce what you are willing to share and what you expect to receive in return.

People often protest unethical behaviour, but we have never stated clearly what ethical behaviour really is in terms of sharing. As far as we are concerned, we do not ask for anything but attribution. If you think that you like one of four ideas, acknowledge that rather than saying it was your brainchild.

Defining what ethical behaviour is with respect to sharing and borrowing is difficult. Still, I think that we should try to come up with some definitions.

Wilfried Grommen

Intellectual property is still an unresolved topic, and we still have a long way ahead of us. We have had major changes in patent legislation in the European Union. We have had discussions on what open source and open data mean in the presence of intellectual property protection. We need to achieve a very delicate balance.

What we do in terms of patents is often quite old-fashioned. We still need to do a lot of work related to open innovation, keeping in mind the changes that we are witnessing.

Jožek Gruškovnjak

There are extremes in the research and development paradigm. There are patents on rounded corners, which is ridiculous. On the other hand, some Chinese companies are trying to claim patents that are actually not patents at all.

Iztok Seljak

Intellectual property is a very important issue. The open innovation world is creating totally new mindsets and relationships. They are so new that we are still trying to understand them, and we are doing that step by step. We still do not have sufficient experience; therefore we do not know how to deal with these issues. Existing regulations are not helpful, as they were created for the old world, not the new one. For example, any non-disclosure agreement is an obstacle to us, as it does not support what we are doing. Current regulations are crippling us.

I think that in the new world of open innovation it is essential to build trust between collaborating partners. Without trust you are simply lost.

Peter Kraljič

Ethics is an important topic, but we must have a clear understanding of what we are talking about. There are cultural issues here. What is ethical to a European, might not be ethical to somebody from an Arab country. There are national standards of ethics, as well as company ethics and individual ethics.

I agree with Iztok that trust is absolutely essential in an open environment. There is an interesting formula that explains what trust is. It is the sum of credibility, reliability, transparency, and openness divided by self-interest. The smaller the self-interest, the bigger the trust.

We can draw lessons about our social innovation and integration in Slovenia. As long as we do not have trust in our politicians, nothing will change in this country.

Toplica Spasojević

I am interested in your opinion about the China's role in everything that you have discussed so far: research and development, open innovation, and ethics.

Henry Chesbrough

We could spend an hour answering your question, but let me make just a couple of remarks. We tend to forget that China is not only a competitor. It is also a brand new market. There is a tremendous opportunity in the transition of hundreds of millions of people from subsistence to middle income. At that point they do not simply want commodities but start valuing quality and better experiences. Over time, as the average income of the Chinese consumer continues to grow, China will be an increasingly attractive market place.

On the competitive side, we constantly hear that there are companies in China which are not behaving in the way that we would like them to in an open and transparent trading system. However, back in the 1960s, there was rampant copying and even piracy in Taiwan and Japan as well. Further back, the United States was a nation of intellectual property pirates. They copied particularly from the United Kingdom and Germany. In the twentieth century the United States changed significantly; Japan and Taiwan have also done so recently. I am optimistic that, as incomes rise and the indigenous base of technology in China grows, technology-based companies in China will demand, and eventually get, strong protection for their intellectual property so that they can protect themselves. It is those indigenous forces that will drive China toward greater integration in the global integration system. That will happen not because they will want to transfer wealth to the West, but because they will try to grow and nurture their own technology base. They will attempt to become an innovation society rather than an imitation society.

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Mark Minevich

I have a question about smart sustainable cities. What role does innovation play in the creation of these modern communities from the perspective of your businesses, and from a broader perspective as well?

Iztok Seljak

As you know, various companies are launching electrical vehicles, yet initial sales are low because these cars are still too expensive. We need to

put in place a complete business model for the whole thing to take off. It just cannot happen without a complete model.

Arshad Ahmad

I will wear the hat of my discipline - finance - and ask a question about financial innovation engineering that was incidentally raised in a comment by Professor Chesbrough. This phenomenon seems to have caused all kinds of side effects. My question is precisely about those effects. People around the world are dealing with the issue of public and private debt. This phenomenon is strangling many economies. But there is another aspect of financial engineering that produces an even more serious side effect. Yet people are not talking about it. For some reason, the media are silent about this, and even leading academics have not said much.

What I have in mind is the issue of derivatives. They were invented to reduce risk. They are supposed to have a notional value of only a portion of the asset. If an asset is worth one hundred dollars, a derivative should be worth a lot less. However, the derivatives market is worth 600 trillion US dollars. The world's economy is one tenth of that. This disproportion has the potential to destroy all the existing innovation today. I wonder if we can talk about this issue in the context of innovation.

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Henry Chesbrough

I would make at least a couple of remarks and invite the panel to jump in. I think that the experience of the financial crisis over the past four or five years does evidence these tremendous side effects that you mentioned. Perhaps we have had too much innovation in the financial sector. The purpose of derivatives was to create a very positive effect on the real economy and society. However, they were taken over by business models that allow them to be partitioned, bought, and sold by financial companies. This reached the point where it was no longer possible for mortgage holders to get a debt reduction. The reason was that the derivatives were so scattered, across so many places, that it was not even possible to identify their holders. In other words, it was impossible to get the holders to agree on a specific reduction of the principal owed and restore solvency to the system. This quickly overran the ability of regulatory bodies to manage the situation.

I have to say that I agree with the premise of your question. Even today, we have not come to terms with the root cause of the problem. This means that it could easily happen again, despite everything that we have been through. We do not seem to have learned a lesson in this regard; a lesson that reduces the chance of this happening next time.

CONCLUDING REMARKS
Prof. Henry Chesbrough

I am in a dangerous position, standing between you and your lunch. I will try to keep my comments short and worthwhile.

We spent the morning talking about open innovation. We learned from the panel discussion that whether we are talking about large firms operating in Central and Eastern European markets, or start-ups that are becoming hidden champions, it is clear that open innovation works in practice. But, you might wonder if it works in theory. And that is where professors come in. They try to give you permission to believe that there is something theoretically important going on here.

To go back to what I said earlier this morning, the production of useful knowledge used to come out of research and development laboratories in strong closed fortresses. Today, the creation of this knowledge is widely distributed across organisations of various sizes in many different parts of the globe. That is a tremendous resource to be exploited rather than neglected. This is especially true in small countries whose internal markets are not large. It is a critical mistake to overlook what is available and try to generate it yourself.

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This brings up a strategic question. How do you grow, profit, and sustain yourself in this world of open, distributed and shared knowledge? If we all have access to the same knowledge, how can a particular company gain an advantage over its competitors? And even if you get a temporary advantage, how on earth do you keep it so that you can sustain yourself?

During the panel discussion, we heard some answers to this question. One idea is that you do not have to be open about everything. It is very important to tell the truth, but you do not have to tell the whole truth to every one. Companies that are becoming skilled in this open environment are very careful to separate what is open and shared from what is private. The core of your business that you build internally should give you an advantage and help you sustain it.

Open innovation is not a model which demands that you abandon your internal activities and open up everything to everybody. Rather, it is a model that leverages and extends your internal activities by involving others who build on top of what you are doing. This still leaves a lot of internal activity in the open innovation model. It is this internal part that provides the answer to

the question of how you build and sustain an advantage in a world of widely shared knowledge.

This gets us to the question of ethics, and trust as well. I loved the trust equation that Peter Kraljič presented. I cannot repeat all the parameters but I think that they are all true. It is a very good formula. But I would add that to be trusted you must first be trustworthy. In the innovation process, this is not a single shot, but rather a repeated game. Those of you who have studied strategy and game theory have undoubtedly heard of the prisoner's dilemma. In a single, one-shot game, the desire to defect dominates. But if you play this game repeatedly, the outcome shifts. The best strategy from an evolutionarily viewpoint is to be trustworthy.

To make that even more concrete, if you work successfully with a partner on a given initiative, it is quite likely that it will not be the last time you do something together. Through what you know and what your partners know, and who you know and who they know, new opportunities will come to you that would not have come if you were not trustworthy.

Being trustworthy is not simply a nice thing to do. There are very powerful business reasons for that.

We had a question about finance. Professor Ahmad was kind enough not to ask another one, related to his question, which is asked frequently: Can we afford innovation, or is it a luxury? In good times we all want it. But when times are tough, we must prioritise and make cuts. We think that innovation is something that we can do without. My answer to that is that this is a matter of how you look forward and prioritise your projects. In the world of commoditising forces, there is a cost to not innovating. We sometimes neglect that cost.

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Think about the products and services that you offer today and how different they are from those of three years ago. If you were to do no further innovation, what would happen to your sales and your market share a couple of years from now? Instead of forming a horizontal flat line, which is what the net present value assumption would be, the sales of most companies would deteriorate at a rapid rate. That is the true case for investing in innovation. If you do not do that, you are much more likely to fall into the commodity trap that I spoke about earlier.

All four panellists exemplified a very powerful concept that I did not talk about much this morning. It is the idea of a platform. It takes what you are doing internally, connects it to the activities of many external participants, and creates a solution – a system and an

architecture – that delivers real value to the customer. If you can create such a platform and be its architect, you will be able to harness the energy of not only your own organisation but also that of many others in ways that bring tremendous value, not least of all to yourself.

Earlier, I mentioned the ecosystem that has grown around Apple's iPhone, iPod, and iPad. One example of how that has turned into a platform is iFund - a creation by one of the venture capital firms in Silicon Valley. This is a venture capital fund of 200 million US dollars and is dedicated to investing in start-ups that are going to create new products and services for Apple's ecosystem. From Apple's viewpoint, somebody has made the decision that it is worthwhile to invest 200 million dollars in what can make Apple's products more valuable to Apple. That is a real platform.

That brings me to another topic that came out of our panel: the importance of social capital. As entrepreneurs, we always think about how we can get money to innovate. And, indeed, it is critical that financial capital be able to expand. But each of the panellists demonstrated that before you start thinking about financial capital, you should think about the social capital that you need.

[46] Yesterday Danica told me that twenty six years ago, when she was founding the school, it was in a hotel building with a few classrooms. How on earth could this become something more substantial? How could it grow? Part of the answer was to develop social capital. She led a group of business schools in Central and Eastern Europe. It is no longer a single business school. It is now an entire association. It has hundreds of members. When you focus on social capital, what is important is not just what you know, but also who you know. I think that entrepreneurs would do well to leverage their social capital before worrying about the financial capital.

Lastly, I return to advice given by Charles Darwin. More than two hundred years ago he taught us a lot about the survival of the fittest in evolutionary biology. His fundamental insight was that it is not the physically strongest species that survive. It is not even the most intelligent. The best survivors are those that are best adapted to the changes in their environment. Being adaptive in business means listening to the market place and responding to that input. It means changing the culture of your organisation so that it is better aligned with the environment that you find yourself in.

The good news is that these things are, generally speaking, more easily done in smaller companies than larger ones. Do not think that open innovation is only for Hewlett Packard and Cisco. Those big companies are profiting well from open innovation, but my message

to you is that if you are smaller, you have an opportunity to be more adaptive. There are plenty of places for you to plug in and innovate in this open innovation environment.

Henry Chesbrough

Internationally acclaimed author and speaker Dr. Henry Chesbrough is the creator of one of the most influential theories of modern business – open innovation. He first coined the term in his 2003 award-winning book, "Open Innovation: The New Imperative for Creating and Profiting from Technology." His insights into open innovation models have restructured the world of research and development and created new landscapes of business development and innovation strategy.

In 2006 he extended its approach from technology innovation to business model innovation in his successful follow-up book, "Open Business Models: How to Thrive in the New Innovation Landscape." Chesbrough's 2011 book, "Open Services Innovation: Rethinking Your Business to Grow and Compete in a New Era" focuses on innovation models that can truly drive transformation and growth. With global economies shifting from being manufacturing-focused to services-focused, the book demonstrates that openness, and its ability to deliver improved choices for customers and better economies for corporations, is a path that can turn commodity companies into trailblazers.

Beyond authoring several highly acclaimed books, Chesbrough also serves as Executive Director, Garwood Center for Corporate Innovation at the UC Berkeley, Haas School of Business, which focuses on conducting research, publishing articles and developing teaching materials around open innovation.   Chesbrough is a tenured Full Professor at ESADE Business School in Barcelona, Spain. Before his work at Berkeley, Chesbrough was an assistant professor of business administration and the Class of 1961 Fellow at the Harvard Business School. His academic work has been published in Harvard Business Review, California Management Review, Sloan Management Review, Research Policy, Industrial and Corporate Change, Research-Technology Management, Business History Review, and the Journal of Evolutionary Economics. Chesbrough is the author of more than 20 case studies on companies in the IT and life sciences sectors, available through Harvard Business School Publishing.

Prior to his academic career, Chesbrough spent 10 years in various product planning and strategic marketing positions in Silicon Valley companies. He worked for seven of those years at Quantum Corporation, a leading hard disk drive manufacturer and a Fortune 500 company. Previously, he worked at Bain and Company. Chesbrough holds a Ph.D. in Business Administration from the University of California, Berkeley, an MBA from Stanford University and a BA from Yale University, summa cum laude.

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This year Executive MBA Program of IEDC–Bled School of Management was awarded by The Association of MBAs (AMBA) as one of the four most innovative MBA programs in the world, among 700 MBA programs, accredited by AMBA, from business schools in over 75 different countries. Prof. Danica Purg, President of IEDC, has been named the 2010 Dean of the Year by the Academy of International Business (AIB) for her outstanding achievements in international business education.The IEDC – Bled School of Management is also the headquarters of the Central and East European Management Development Association (CEEMAN), the International Management Teachers Academy (IMTA), the European Leadership Centre (ELC), and the UN Global Compact Slovenia.

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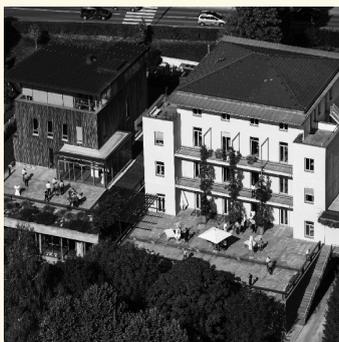
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