Topics discussed in this working session:

- Multi-University Collaboration: definition, goals, problems
- Rationale for multi-university collaboration
- Incentive structure for entrepreneurship studies
- Collaboration between engineering and business schools and between multi-located schools
- Student programs: global coordination projects, global startups
- Definition of entrepreneurship to include non-financial elements
- Expanding entrepreneurship contribution beyond financial

Background on Peter Reid

In June 2000, Peter Reid joined the Centre for Scientific Enterprise as its first full-time Chief Executive Officer. Prior to joining the Centre, Peter founded three companies which were variously involved with developing new patent-protected products, precision engineering and process engineering. Peter was also appointed Managing Director of another UK-based engineering company which he sold to a listed company.

From 1998 - 2000, Peter acted as a consultant to a number of businesses in the new product development, chemical processing, publishing and other sectors, assisting them to raise equity, manage the commercialization of technology innovations &/or restructure their operations.

Peter is an alumnus of University College London (Physics) and London Business School (Sloan Fellow - MSc in Management).
Transcription of Working Session

Below is the list that Mr. Reid used to begin the session. He filled in the two columns in the course of his discussion.

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Why do we collaborate?

| 1. Scope Benefits                | Creating new opportunities, filling gaps in your capacity |
| 2. Scale Benefits                | Not quality or diversity of participants                  |
| 3. Economies of scale            | Critical mass to cover overhead                           |
| 4. Political/Funding Presence    | In the UK, 4 or 5 universities bid and divide the grant. Really a bidding consortia to divide the spoils. Breeds bad practice. |
| 5. Share good practice/jump start new initiatives | A lot of collaborations are short-term |

Reid: I feel fortunate to have this session because the only thing I do is university collaboration. It would be great to set the landscape and have a discussion with some of these experts leading it. Instead you got me.

Let’s start with what university collaboration is. And they we will talk about why we collaborate. Then pick a couple topic and discuss them. While the reasons and methods are obvious and generic, but there may be specific types of collaboration.

First is that we collaborate to teach for credit. There was a great talk yesterday about a Ph.D. program where technologists, lawyers, and MBA students are collaborating on projects. For credit teaching at the Ph.D. level. There are a lot of collaboration around vocational training. There is a lot of collaboration around vocational training which are not for credit but which are about raising aspirations and inspirations.

Lots of universities look to coordinate and student affairs, to build demand from the bottom, to expand the network for future, to make it easier for companies to look at your research and students.
Clearly research is a hot topic. I put technology enterprise by it. A lot of engineering departments for research projects but I think if we look at the list…. But for researching technologies get to market. Where is the value in multi-university collaboration about technology exploitation.

Business development.

Technology transfer. There is now movement within Britain for a number of institutions to share technology licensing and transfer office because the universities are too small to adequately manage their own commercialization activities. There are universities with expertise in each, so they can share that resource. That may not be something which Stanford or MIT would need. But smaller universities may afford not to do. That may be the only way to get the expertise and staff.

The last is funding-raising. Depending on whose funding, they may be demanding collaboration.

My day job is nothing but multi-university collaboration. I run an enterprise where we have graduates in University City London, taking courses with MBA students for credit. My original job was underseeing collaboration between business schools and technology partners in a very big research institute where there was a cultural fit. We run vocational teaching programs, a bit of student network, and absolutely no research—that’s not my role and I know LBS does it. UCL is considering doing it. I stay clear of that.

Business development. There are 40 universities in London. Of the 40, 20 have technology partners which (?) in their research. We recruited 20 scientists and (?) across 23 institutions. Our role is to help individual scientists be represented at conference. They have to be commendable. We train them to help their colleagues do more business and have better interactions with business.

Last year, the research scientists generated 90,000 pounds each. Most of the transactions were for free. Of the 90,000 pounds, 2.5% was licensing. 0% was spin-outs. 97.5% was about relationships with universities: companies sponsoring undergraduates, companies funding Ph.D. students, doing joint publications. So most of what the academics were doing was way before transfer technology office get involved. It was all about building better and deeper relationships with businesses and universities. It was a precursor to technology transfer.

There are big benefits for aggregating of aggregating for business development which is less formal and less legal than contracts. So you don’t need contracts.
That makes seven reasons. I have eight on the wall. Have I missed anything? Are you any of you doing something…

Woman: <inaudible…so what we have done is collaboration between five university including …so it is not funded research but it is not…>

It’s curriculum courses and kits for anyone who wants to get started. It is also India-specific.

Reid: When I finish the next slide, we are going to have to pick which of these eight we want to talk about.

Why do we collaborate? Because it is bloody hard work. Collaboration brings different cultures, different expectations, overhead, and added risk. So collaboration should not be the norm. There must be positive reasons for collaboration.

First is bringing lawyers, MBA students, and technologists together—broadening the scope of the class. So collaborations often fill gaps within your capacity. So what is about collaboration that is completely from what you do?

Definite expertise within universities. So combining them provides a scope benefit. Scale benefits. I am aware that I am not politically correct. That’s dangerous in California. I saw Tina Seelig’s eyebrow go up when I talk about businessmen. In California, it’s business people.

I have to say in 1945, collaborators were (?) scarce.

Scale benefits means what is the benefit of 92% of the science departments to collaborate in enterprise. It is not saying let’s different sorts of people—that’s scope. That’s getting life science, business science, and lawyers together. Why would you want to collaborate entrepreneurship department with entrepreneurship departments or computer science departments with computer science departments. What are the benefits with diversity of age, ethnic background or whatever else that you are getting by combining like and like.

Economies of scale are very different from scale benefits (?)..

Of course a lot of people collaborate because we are paid to collaborate. That’s quite dangerous. In the U.K., the government gives lots of money to encourage universities to collaborate in innovation and enterprise space. Typically four or five universities bid. They get awarded 4 million pounds for entrepreneurship education and technologists. They divide the money up into courses, a quarter each. Consortia divide the spoils after the event. That’s not
what government intended...but that is what often happens. If that is why people collaborate, then there may not be a long-term basis for collaboration. Is there long-term … to fund collaboration. It will be breeding bad practice.

Clearly the issue is to get other people to practice, to jump start your own activities, just takes too long. By sharing, you go up the learning curve quickly or by working with partners. You are jumping to them. Good practice to jump start.

I collaborate because you want a lot of collaboration. A lot of collaborations are inherently short-term and they should be short-term, so you need to structure to allow that. Others are only successful if they are long-term. Again, it is hard work so you need a clear strategy and rationale for collaboration.

I can take a census and ask who is doing these eights. And then who is doing this as their primary activities.

<taking poll of session participants>

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Results of Poll

What are the real risks/problems? (Polling audience)

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Reid: We should start by discussing how to develop materials for improving, how to teach multi-university collaboration. Why do we want to teach? Is it a skill benefit that is cheaper? Is it sharing best practice? Is it hard or demanding?

Woman: Yes, there is a skill benefit.

<inaudible exchange of conversation>

Reid: As far as business schools concerned, we are changing (?) about 80 scientists into London Business School a year to take elective courses. London MBA
two year full-time program The scientists in particularly Ph.D.-post-doc faculty… London Business School benefits. They can say that they teach a course on technology innovation. It is awful easier than to teach to MBA students. They are in-class experts.

UCL (University College London) does not have the capacity to teach these expert class with their technologists.

Man:  …<inaudible>…It is the coordinator faculty who connect very effectively and hold the thing together.

Man:  How about the other direction.

Reid:  You can look at Stanford or MIT. Most of the technologists who go to business school in greater number than MBA students who go to tech university. There are not just as many MBA students who are technologists. But that it also because the MBA students are not interested in the technology.

Tom  They are also less qualified. You cannot drop into a upper level course.
Kosnik:  It is harder to get in.

Reid:  It is critical to look at the schools. The recruitment pays off. They are actually right. The other reason is…funding something of these parts…are not courses which MBA students would not be able …which are more appropriate for technology university. The last…so they can take on much better than or in biotech. So these innovations…

Man:  Although we are correct in saying…business school for technology. Technology course is not bound on mathematics and focused on a customer problem. It is looking at trends in technology. That changes the game. The second thing is that a lot of MBA students who have technical undergraduate degree are capable. The real issue is whether something is going that attracts their attention.

Reid:  One is we have MBA students who are started to take course in systems analysis or managing software development, so it is not coding as it is managing software development. Another one is that we have actually a professor from the LBS teaching a course at UCL in computer science called software and financial services. He could not teach that at London Business School. There are not enough students there who can understand or care but he can teach it in a computer science school where there are lots of students who get jobs in financial services. Finding low cost ways where there is little buy-in.
Man: Your comment about the cost issue is important because it is not just monetary cost. There are fundamental structural differences in incentive systems between engineering and business schools. In Engineering it is to get grants and to develop innovative products. That has a natural link to business career. In most business schools, professors are hired to teach but they are rewarded by the market structure for their publications. That naturally draws them away from activities that we as a group would favor in business school. If my market value is judged by my publications with an orientation to top tier journals, every minute that I spend with businesses is a minute drawn away from that research activity. Somehow in the business school arena, we have to change the structure. Once the professor has tenure they have a bit more freedom. Nonetheless, if I am off engaging interdisciplinary entrepreneurial areas, it draws me away from my discipline, so we have this strong discipline loyalty at work here. The incentive structure creates conflict. I would like to add that the business community is frustrated with that model.

Man from UNC: I know that we focused primarily on engineering and business linkages…If you listen to our speakers, (?) and Bob Sutton, this morning’s commentary and introductory, change comes from the outside. Literally whether this person coming out psychology or Dr. Leakely telling (?) not to read the material about chimps before studying them. We are from the University of North Carolina. We found that most of our long list of successful entrepreneurs came out of the Arts & Science. They had a different perspective, a different orientation, and greater openness. Some of the greatest collaboration can occur between engineering and arts and sciences. I hope we can look at that as well. Then the challenge is how to inspire. Many of the people who become the most successful engineers at Chapel Hill had no real intention of being entrepreneurs when they were undergraduates. They were in the arts and humanities, social sciences, or in other areas. We are involved with the Kauffman Foundation to get entrepreneurship spread across and to inspire people in the arts and sciences to teach them how to become entrepreneurs. Connect them with entrepreneurs, help them create new ventures but to do that is quite a challenge.

We found that we had to change the definition of entrepreneurship. If we only focused on business venturing at the freshman and software level, we missed a lot of that opportunity to inspire. The working definition we use is transforming ideas into enterprise that creates value: civic, economic, social, environmental. Such that value generates the income or other types of return to sustain and grow the enterprise. We found that we really had to change the definition of entrepreneur and keep it within the domain of entrepreneur. Ultimately, it is sustaining and growing the organization, not public service which is a one shot. But the return of that value in the form of income or other types resources that continue to grow the enterprise.
We found that to get the people across the campuses who can be most likely entrepreneur takes a tweaking of the entrepreneur driving the definition. I am not sure to what extent that applies across campus but we found that within campus to get the students interested and involved in working with business schools and working people in human and applied sciences that we need to look at entrepreneurship in a slightly different way to improve social and civic entrepreneurship and arranging other types of entrepreneurship. Many of these go on to create businesses. Our entrepreneurial resident started as a social entrepreneur but ended up as a venture capitalists. Their ideas and ideals as undergrads was more in the social enterpreneurship arena.

<not audible>

Man: …changing the norms and mores and ways…is slow…that is the challenge we have in inspiring people outside our engineering and business course to become involved in entrepreneurship.

Reid: The science we have is to say in those schools…how collaboration going to change their mind. If they are unwilling to do it at all, then doing it….

What I am saying is that all of that is a change in attitude and…

Woman: Universities placing students in other schools in exchange. I would like to take part of the programs and … I do multi-university collaborations and they are web-based. Absolutely difficult in doing that.

Kosnik: We have been doing it since 1998. If other people are not interested in collaborating over distance, then we will take the discussion off the table.

<not audible exchange>

Kosnik: How many others are interested in collaboration at a distance? Two short examples of a three-way university collaboration. One is in the suburbs of Stockholm, Sweden. One is here in Silicon Valley. One is in Singapore. The time zones are pretty distant. There were two courses that were done. Both were three year. Not all the faculty are identical but the student motivations were similar. The problems of the courses…the first course is global project coordination. We believe that students needed to learn how to manage and be teams on projects that were global, not necessarily meet people that you will be working with. Second is global entrepreneurial leadership. The premise is there is that leadership and entrepreneurship are done in the cultural context. By understanding how entrepreneurs and leaders do their work in different countries and culture. We bring that in and put students what they need to do in the course of their careers as well. Faculty who are involved in this believe that the next generation will going to have to work in companies that span across continents.
The use of simultaneous real-time data conferencing at least once a week, with very active web discussion where the students are doing the equivalent of their class discussion 7x24 on the web. Have people on the team three places at once, so you literally make the students who are in the study groups in virtual teams. They are typically international. You have these three in place, so you have a nucleus in three locations. You got a nucleus in three locations: faculty, industry or mentor sponsor. Part what I think entrepreneurship education has to be about is that it has a human dimension. It has the work of getting people to work together to execute and to do the things that you need to do. Letting them experience is important. Letting them ask people who are more experienced at doing that, how they do it and visit them at the company is important. That a snapshot we have been doing.

Reid: How are they assessed? Practical or technical? Grading at three universities is different.

Kosnik: From the student’s point of view, the fact you are grading in three university is very different. Telling people that they are on teams and the teams themselves are business, so that their project deliverables are …they actually the full points in the class and profits are allocated. But the mechanism to get to local grade is very messy and complicated. There are some angst. Maybe I will not get an A in this university because the curve is the way it is. We address that upfront by saying “forget about the grade.” You got to learn something from this course. You are going to earn your profits and the grade will be whatever it is. If you need to get an A and be worried about that, don’t take the course. You may get one but it will be an accident.

The most difficult thing has been getting the technology to work across three locations at one time because live video-conferencing beyond two places…the quality of the audio especially if you got 90 people in the class, and three locations, and the technology is fragile. The chances in two hours that you will have an interruption is real. You have to design the expectation that the technology is not perfect. But guess what, technology is not perfect.

Reid: People at Stanford and Singapore are very sophisticated.

Kosnik: Between 1998-2004, the technology has improved tremendously. For those of you who have tried it, I am really excited about where it is. I think finding a way to get these things to work even though people are not in the same place. We understand about teams and trust, suggest that there has got to be a little face time before you really put all of your trust. We managed to create a fair amount of trust without… a semester or quarter …now I can smell the smell, see the sweat, feel the pheromones…I think the bond…is astounding. We made it work.
Lena Ramfelt and I are global project coordinators. Linda, (?), and I were strangers in 1997. I knew that I wanted to do a link between Stanford and Singapore and Sweden wants to do that too.

Lena and I are still working…Even if you meet someone new who you can hitch your wagon to for the next four or five years, you need to meet three or four times to see what happens. You got to have a people who are willing to suck it up for at least a year. Otherwise you don’t have enough traction. Most people give up. I think you have the same issue whether or not you are separated by thousands of miles.

The global project coordination was 90% graduate students. The global entrepreneurship leadership was a mix: 50/50 undergrads/graduate students.

<inaudible commentary by Mr. Chong Moon Lee>

The following are key points Mr. Lee shared with the group as recalled by the transcriptionist. Mr. Lee is a co-author of “Silicon Valley Edge.” He is an entrepreneur, investor, and benefactor.

Mr. Lee’s key points:

• Entrepreneurs should not be motivated just by financial gains. They should return some of their gains to society, e.g., donations. Teach young entrepreneurs about life and life goals, beyond financial gain.
• Universities should do more to help entrepreneurs. For example, universities should provide service to entrepreneurs to start their business.
• In addition to teaching, professors need to know how to lead and provide practical knowledge. The conventional perspective that “Only teaching is my job. Whatever problem you have go somewhere else and find it yourself” needs to change.
• Entrepreneurs seeking venture capital money need to be aware that they cannot go to investors with the mentality of “just me and retaining ownership.” “I encounter this problem all the time. Young people say ‘my ideas, my technology, my start-up, my father, my brother, my friend I spent $100,000 and I am at the stage of presenting my ideas to you, venture capitalist. This is my company, my technology…I have to own it.’”

<inaudible exchange. Discussion that private capital is 18-40 times larger than venture capital. Venture capital has been more successful in infiltrating startups. There is a need for faculty networking with each other and with capital markets.>

Reid: The question is how to do this between universities.

<inaudible exchange>
Man: …value…the partner needs to figure out what is the total value chain or set. And which partner is getting what part of it because at the end of the day, the partners are not sufficiently rewarded. One of the biggest problems that you can see is that venture capitalist…proving that you can do it and do it really well. Partners get a lot of value and sustain it. Others do it okay and it is very hard to sustain. There are some who do it poorly and does not last very long.

So this goes back to your early question whether there are barriers to getting these happen. The other side is what are the success factors.

Man from UNC: I think Mr. Moon’s comments were inspiring. In looking at the intersection between entrepreneurship, community and society. I think you to go back to entrepreneurship program and look at attitudes and the exposure. You are never going to convert everyone.

We have done a lot of work in Beijing and we ran into a brick wall because there is not a culture of industry giving that you described. We can get money from multinationals, but not from the Thai, Taiwan, and Korean MNC. We can get a little big from Japanese MNC. They say there is a government corporation program. The question is how to create a sequence of linkages. We are now experimenting now in UNC, working with Chinese University of HK and Copenhagen University. To put the program together, these are all businesses, not just across campus where they are major in business. They take one semester in each institution. UNC is going to entrepreneurship. Chinese University is going to focus on global business. Copenhagen is to focus on ethics. The students receive a certificate from each of these areas. There are programs that teach global logistics research initiatives that are made up of 12 universities (National University of Singapore, Chinese University of Hong Kong, Delft University…). From that we have spun off a research teacher for free (?), Delt, Monterey in Mexico and UNC, we put a three week real-time interactive course together where the undergraduates from Delft, UNC, and Monterey create a new cell, source the products, assemble, sell them, and service them. Students with different culture, language, and orientation try to work out all sorts of challenges. It was a wonderful experiment. Now we are trying to work with Xinghua University in Beijing to set a center for logistics and economic development. We will have an operations aspect and also looks at job creation and economic development, i.e., entrepreneurship of job development. Entrepreneurship of what? What is the purpose? Is it individual wealth creation? Yet you have to have it. That is necessary but not sufficient. How do you bridge into? When you think about entrepreneurship, not just creating wealth, but at the same time creating the most jobs.

This fits into the needs of the developing world. Fourth, is the program we are doing with funding from Kauffman, to give UNC students who come from
small towns in the South. They have very little exposure. We offer them an opportunity to experience the Chinese entrepreneurial mind. To place them in the diaspora of Chinese in S.E. Asia. First, they will take courses in (?) at S. Thomston University and have exposure to the Thai orientation to entrepreneurship. Then they will work for six months with an English speaking Chinese-Thai small business. The purpose is for them to see different ways of thinking, whether it is the long-term view or the way in which family interact in succession. This is working with Tula (?).

At the same time, entrepreneurship is a contact sport. It is one where there has to be that linkage or theory and experience, theory and practice. How do we give our students this whole different perspective of what entrepreneurship is.

We are experimenting with laboratories with these different approaches, whether it is to take students from Delft, Monterey Tech or UNC, link them through their professors in teams, to collaborate and create a company that would be new and source differently, to assemble and sell but then maybe go to the next step and give back.

To look at entrepreneurship in terms not only creating the wealth but distributing the wealth. Create the reinforcing cycle because as you distribute that wealth, you create new opportunities to markets and educational sphere—that is what development is all about. It is in the interest of the U.S. to have economic development abroad because they are going to buy our products and supply us with trained minds. We are all in this together, so I agree with your opening philosophy.

Regarding Mr. Lee’s comments, the question is how to close the loop? We have to do it cross-culturally. We start off working with people but there are schools next door but this distance, with jet airplane…there is no reason why you cannot connect young people in Mexico, China, Holland, and the U.S. Think no small thoughts in trying to achieve something that is exceptional. Working with our students. We have to experiment. We have run into a few brick walls and we will continue to do it. Just like we had to change the definition of entrepreneurship. Pure entrepreneurship in business schools don’t like our definition. However, there are certain things you have to do to get people inspired. I know that I have been long-winded, but I wanted to give you an idea of our efforts to try to be peripheral and connect. We found that the best way was to connect internationally with schools around the world. Our students learn the most.

Reid: We are almost out of time.

<inaudible comment by audience>
Man: …the incentive structure is contradictory to the... We can continue to have entrepreneurship programs that will be continued by the faculty and scholars. What is required is a step function change…then the incentive structure will have to change. The model for that is scholarship.

It goes to your comment and your comment about capitalism. Shift the incentive structure not away from scholarship of discovery but starting to put people in place. Until that happens, groups like this will continue to meet.

Reid: Ten minutes left.

Dana (transcriptionist): Regarding the incentive structure, what I see happening in academia is that rather than converting the incentive structure is the growth of adjunct faculty to do what people are talking about.

Man: That creates a secondary citizen structure and that has to change.

<inaudible conversation until the end of the session. Most of the discussion was about the incentive structure in academia to teach entrepreneurship.>