

## **INNOVATION, BRAIN CIRCULATION, AND A WORLD WITHOUT BORDERS**

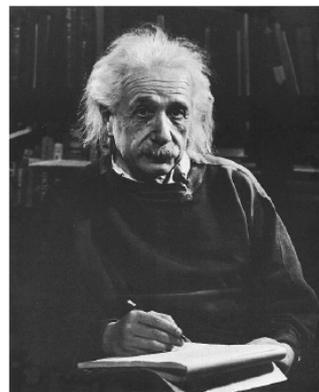
**On the occasion of Innovation 2010 – Ottawa, Canada, December 7<sup>th</sup> 2010**

**Lunch time address – Professor Alan Barrell, Entrepreneur in Residence, Centre for Entrepreneurial Learning – Judge Business School, University of Cambridge**

It is a great delight and truly a privilege for me to be here today with you all. – amongst friends and colleagues. My congratulations to the organisers and sponsors – it is a wonderful gathering.

As you can see – I wear my Canadian badge with pride – as is fitting at such an event. I also thank my friends back home in London at the Canadian High Commission there for all their help and continued encouragement and my colleagues at McMaster University in Hamilton Ontario – where I am also a part time Entrepreneur in Residence. We are here, discussing Innovation in a country which invests well above the Western average in Research and Development, and which is dedicated – as evidenced here and around the country, through Innovation, to turn more of that excellent R&D into products and services to delight and support mankind, and create significant wealth and thereby enhance economic and social development.

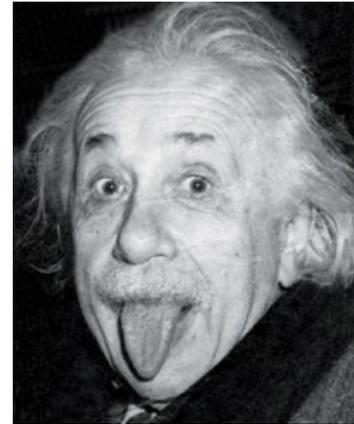
I'm not here to talk about myself, suffice it to say I have benefitted from a life of “happy accidents” rather than a planned career. I planned to do general medicine, but didn't quite make it, but did make medical technology, leading from clinical laboratory medicine to a career in the healthcare industry, including seventeen years with Baxter healthcare around the world, and hi-jacks into industrial electronics and venture capital. Most recently, I have discovered the most wonderful world of The Next Generation through my work in Universities and with numbers of company start ups and spin-outs. I refuse to be called an academic – maybe “pracademic” is permissible! Tomorrow's World, tomorrow's citizens, creativity, enterprise, entrepreneurship, brain circulation, Open Innovation – what more exciting place can we imagine? My BIG dream is of a World Without Borders – NOT a political order, but a World I believe we can create for ourselves and the next generation with a mindset that crosses cultures, boundaries, barriers and borders. Knowledge transfer and knowledge sharing – yes “Brain Circulation”. Think about it – it is what we are doing right here and now at this conference. But much more is needed.



Great to have VISION – yes, and it was a great visionary AND A GREAT SCIENTIST AND INNOVATOR, Albert Einstein who told the world – and I quote **“Imagination is more important than Knowledge – Knowledge is limited – Imagination encircles the World”**.

Einstein gave us many wise thoughts and his ideas changed the World. Here are just two more gems from the great man:-

**“Anyone who has never made a mistake – has never tried anything new”** and this great set of words – **“It is INSANE to go on doing the same thing over and over again and expect a different result”** Here he is telling us, I think, what Innovation is NOT!



I will return to my World Without Borders theme shortly, and relate it to people, individuals, communities, society and economic development. But right now I would like us to consider together the Global Context within which our thoughts, ideas, aims and ambitions on Creativity, Innovation, Entrepreneurship and Brain Circulation are set. Our World and future generations are facing some dramatic and huge challenges. Not least the “older economies” where so much energy is being expended on seeking new ways of generating growth and regenerating, in some cases, tired old industrial heartlands.

Is the World in Crisis ? That’s a question I am asked wherever I go. What do YOU think ? And, if the answer is YES – what’s the BIGGEST Crisis ?

- The Financial Crisis?.....The CREDIT CRUNCH ( with Euro on verge of collapse)
- The Climate Crisis?..... THE CARBON CRUNCH
- The Energy Crisis?..... THE OIL CRUNCH

And I haven’t mentioned food for four billion more mouths by 2050 – or that useful commodity – WATER !

危机

We all know there are huge issues confronting the human race and we won’t find the answers here today. I am very interested however in exploring together with you, how we might respond if and when we feel we have a crisis. Do we have choices at such times ? How important might be our mindset when confronting a crisis ? I just

returned from my twentieth visit to China (been going there for twenty years now). The Chinese have a most interesting two character word – which I often show in my slides when speaking in formal presentation settings. Here you get a glimpse of it. WAY JEE – that’s the English phonetic pronunciation – WAY JEE. It can have one of two distinct meanings – It can mean CRISIS – or equally, in another context –

OPPORTUNITY. How about that ? So Chinese philosophy and thinking suggest that WE give that word a meaning – within ourselves – by the way we look at a situation or circumstance. “See it how you want to see it – and believe it”. In 1857, Charles Dickens, writing the very first line of that great novel “A Tale of two Cities” used these words ....”It was the BEST of times...it was the WORST of times”. He was writing about the French Revolution. Same message. In China I hear no talk of crisis of course – and a lot of noise about opportunity. Looking around here, and having spent time with many of you – I have no doubt about the positive mindset being prevalent – and I see a lot of reaching out, willingness to consider risks, and people looking ahead with great purpose.

Canada and the UK – our two nations, as do others in the West , have a particular need at this time for Innovation, Entrepreneurs, Entrepreneurship, New Business Creation and International Business Expansion, and we have to achieve it all within a new and rapidly changing World order. “Look East and look South young man ( or woman)” – and see where so much positive development is taking place. Seismic and irreversible shifts have been taking place and continue in the dynamic balance of the World Economy. And it changes as we sit here together. China, India, Brazil, Russia and other developing nations are changing our World. I have no time to review much of the detail. Plenty is being written about it, but just back from China I am reminded of some of the phenomenal things happening there.

## The West’s Competition ??



Courtesy of Asia Pacific Foundation

- A Nation of 1.4 billion citizens educating rapidly. “Education, Education Education”, has not been in China, as it has been in my nation, merely the mantra of politicians seeking re-election – it has become a way of life. They are DOING it. 10 million new graduates in the last year in China alone, and

two million Chinese studying or working overseas in Western Universities. 200,000 in my country. Most will return home – and take with them a lot of new and liberal ideas – intent upon helping their country and its economy grow. Brain Circulation. Britain and Canada would really like more of them to stay and contribute to our programmes – but I don't see this process as a brain drain. Numbers go back to China and work for our companies there. On a statistical note – the city of Chongqing now has a population reported to be 35 millions – a tad more than all of Canada – squeezed into one burgeoning City in China – 400,000 moved in there last year from the countryside. Awesome !

Let's hit a few more facts about China and reflect on the positive aspects for our economies – and why Innovation and Entrepreneurship become so much more important as we enter tomorrow's World.

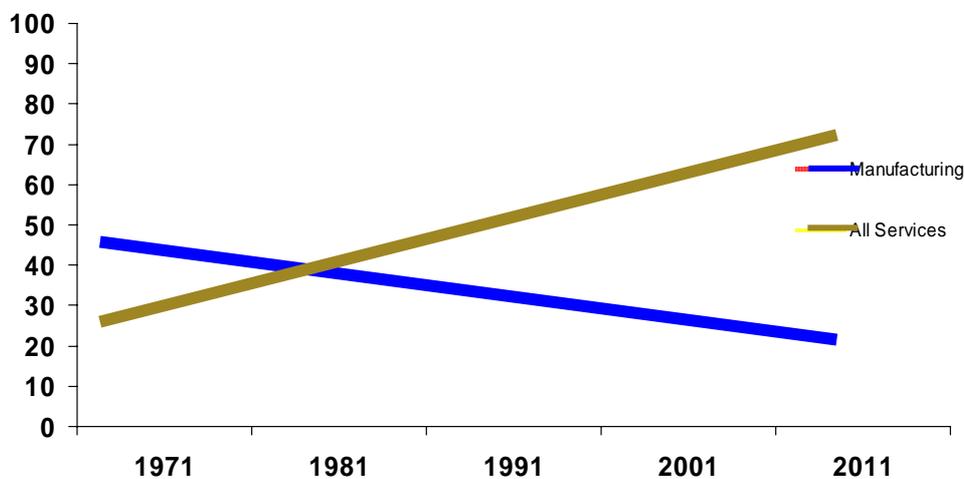
- GDP Growth 9.6% currently – and the growth has been sustained at such a level for longer than any nation has achieved it in modern times. The International Monetary Fund reported that last year Chinese growth represented 20% - one fifth of ALL the Worlds GDP growth. Think how important that growth was to the World and not least the West – held back by sluggish growth and recession. And it wasn't all exports – Germany, France and Canada – amongst others grew business in China significantly. Audi in 2010 project they will sell more cars in China than in Europe. And on cars – China made more than the USA last year.
- China, after the USA is now the Worlds second largest Economy
- Of course China consumes – 46% of the Worlds coal is used there. In 2009 China consumed more crude steel than USA, Europe and Japan combined. Imports have soared – 10 years ago China was importing 40% of all the parts and components used in manufacturing in the World. In 2008 it had grown to 70%
- But China is rapidly being transformed – after developing from an Agrarian Economy to the World's Factory – towards being the World's largest consumer. The Chairman of China Mobile told us in Hong Kong three weeks ago that in 2010 – the number of new mobile telephones sold in China will be more than the number in the rest of the World( I haven't been able to check that yet!)
- And R&D is getting an increasing budget every year in China. There is more being invested in Solar Energy Research in China than most other places. And on Intellectual Property management and protection – which a lot of people worry about – China has thrown resources at its patenting system which is dramatically improved,
- In 15 years – whatever the problems – and there are many – China has lifted 300 million people out of poverty and the life expectancy of today's Chinese newborns is an average of 80 years.

- The banking industry is well regulated of course, and China sits today on \$ reserves of about 2.5 trillions.

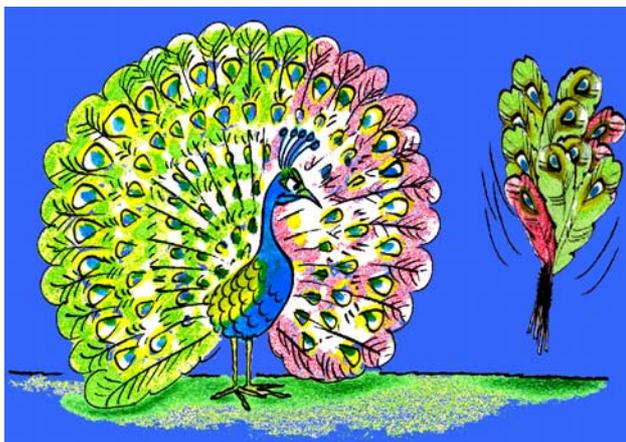
Now consider that Europe's Economy is now 70% dependent for employment and GDP growth on service – not manufacturing industries – since a lot of manufacturing has migrated – and we surely must agree.....this **DRAMA !....** And I haven't said anything about India or Brazil – no time. But is it **CRISIS** for us – or **OPPORTUNITY** ? The movement of power and influence Eastwards will continue.

## Changes in Industrial Structure - Europe

% of Total Employment



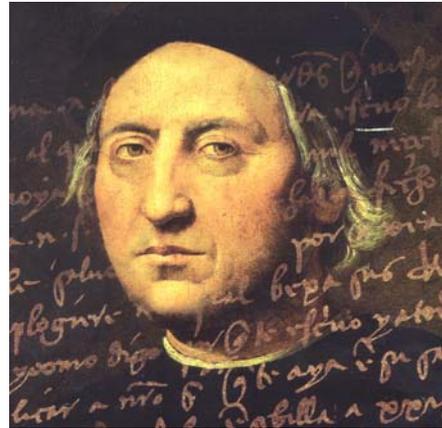
A World “on the move” – China’s Tiger and India’s Elephant leading the charge and in the ascent. Why cannot this all be opportunity for us in the West – not least Canada with such a diverse population – including very many with Chinese roots? Remember **WAY JEE** ? If it is **NOT** a **CRISIS** it is a massive **OPPORTUNITY** – but certainly a massive challenge too – for us in the West. A challenge to plan and deliver growth and to do so through innovation, by constructing new business models, by adapting and finding new ways to collaborate together and with partners in the Developing Economies. To do it, I suggest we have to cast aside some of the old notions of Competitiveness and Competition.



To illustrate my point here I want you to imagine with me a beautiful, colourful Peacock – showing all those feathers in the finest display. “I am the Greatest” he might be thinking as he struts his stuff. Now bring to mind for me a feather duster...made with a few Peacock feathers tied together. Think about it – Today’s Peacock might be – and often has become -

..Tomorrow's feather duster. Most of us have seen at least a few proud companies go through that transformation – sometimes quite fast . My proposition is that we should not simply be laying plans to fight China competitively, or any other emerging economy – thinking of business in “the old ways”. This whole conference has a theme of Collaboration, “Co- Opetition”, Synergy, Symbiosis, Partnerships – profitable co-existence. I can only believe it makes sense.

SO – time for a bit of inspiration I think. Let's bring to mind some Heroes – as we think about Innovation and Brain Circulation. After all, great transformations and great deeds need heroes and role models – don't they? Here goes....let's start with Christopher Columbus – everyone has heard of Chris. Imagine with me – Christopher and his courageous crew boarding those rickety old wooden boats all those centuries ago – and sailing into the great Oceans of the World. Three times they sailed – not knowing where they were going ( and some of them thought the world might be flat remember ?), three times they hit land and didn't know where they were, and three times they struggled home unable to tell anyone clearly where they had been. And you say AHA – what a way to run a sailing company! But we all know what's behind this – exploration, adventure, finding new countries and riches and things....Christopher comes first in my Heroes list today for a very special reason. I am a Business Angel – and I bet we have a few more present ??? And Christopher was supported all those years ago by one of the first Business Angels we have records of in history. Christopher, who was from Genoa in Italy – was financed on those voyages by Queen Isabella the First of Spain. A cross border and cross cultural deal got him started. And what a champion of a World Without Borders he was.



A different kind of hero – the great Irish writer – George Bernard Shaw. He gets my vote for the best definition I could give you of an Entrepreneur . Story is he was in his London House and was visited by a spotty youth who assailed the great man with a barrage of arcane questions. George got very cross with this and jumped up and told the younger man – “Shut up young man – **You look at things and ask Why, but I Dream of things that never were and ask WHY NOT**” What a mindset – Dreaming of Things that Never Were” But maybe that's where Bill Gates and Steve Jobs came from....And a hero I bet none of you have heard of even though he won the Nobel Prize – Stanis Georgyi – his words “**Creativity is nothing more than looking at the same things as everyone else and THINKING something different**”. A similar message!



**“You look at things  
and ask - why?  
but I dream of  
things that never  
were and ask -  
why not?”**

**Open Innovation  
encourages “Dreaming  
of things that never  
were” ....**

*George Bernard Shaw*

You will have your own Heroes. Time does not permit me to name all of mine - being from Cambridge in England - I can call on a few .... Newton, Darwin, Crick and Watson - DNA and the double helix and all of that. But I am in Canada and at an event which is all about Innovation and Collaboration - for the common human good. So I want to celebrate with you two Canadian Heroes who changed the World - one born and bred here - and never given due international recognition - the other an import - who came here and loved it. Being involved in medicine and medical technology, as I have been all my life Dr Sir Frederick Banting , Nobel Laureate, is one of my heroes and one of Canada’s great entrepreneurial medical figures.

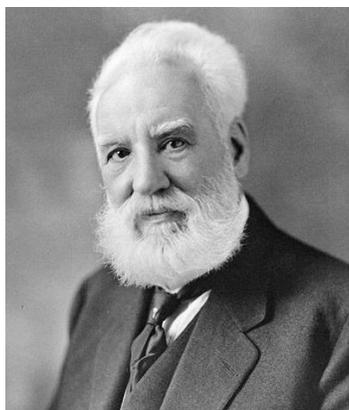


When only twenty one years old, he did the definitive work which led to the discovery and development for therapeutic use of Insulin - which diabetics lack. His work and that of his colleagues saved millions of lives. And if that were not enough, he went on into aviation research and designed the pilots G-Suit and other things of note. His work in aviation led to a tragic early death, when at 49 he was killed in a plane crash - that was in 1941 during World War Two. Innovation, Entrepreneurship, Brain Circulation - and benefitting people with Diabetes all over the World. A Hero indeed!

Now - here is a test for you - to see if you can identify my second Canadian Hero - from these words of great significance.....But WHY were they of such profound significance - what made them special ?...Here they are.... **”Mr Watson - come here....I need you”**. These were the very first words EVER transmitted by telegraphy - on March



10<sup>th</sup> 1876 – it all happened in Ontario in Canada. The voice was that of a Scotsman who ended his days in Nova Scotia ( where else ?! ) – an adopted son of Canada – who founded the Bell telephone Company – and gave us the telephone – Alexander Graham Bell.



Banting and Bell – human beings – just like us – started out from scratch in each case and made it big time – big time for themselves, millions of others, society and the World at large. I wonder if the next Banting, Bell or even Einstein – or maybe Bill Gates is seated amongst us here today ? Only time will tell.

I have a great quote for you from Alexander Graham Bell – *“Leave the beaten track behind occasionally and dive into the woods. Every time you do, you are certain to find something you have never seen before”* Great advice for budding entrepreneurs – indeed for all of us.

Returning to my theme and dream of **“A World Without Borders”** I would like us to look ahead together – some of us – the “oldies” here have in some ways “done our bit and played our part”. Time to hand over to the Next Generation who will inherit the World, the challenges and the opportunities. My subject “Innovation, Brain Circulation and a World Without Borders really is all about the future. I have spoken of VISION – and Visions are so important. But as the Japanese proverb writer reminds us **“Vision Without Action is a Daydream .....but Action Without Vision is a Nightmare”** Please think about it. At this event we have been looking at best practices in collaboration to turn more great ideas and R&D into products, services and wealth. Collaborations across boundaries, borders and between like minded innovators. I am greatly encouraged that my Dream of a World Without Borders can be much more than a dream. And it has not been my subject for today – but think how technology such as mobile communications and the Internet can do to help us – we have great technological tools my heroes didn’t even dream of.

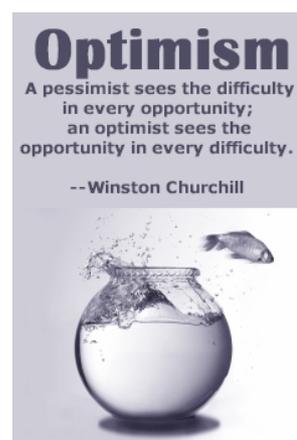
A practical collaboration about to begin between Canada and the UK on a developing set of ideas for Best Practice in bridging the translational gap between excellent Research and Developed Products relates to a wonderful Austrian born entrepreneur – Dr Herman Hauser – for many years now a Cambridge resident and who has invested in 100 companies and can claim success with five \$billion IPOs. His report to our Government – **“The Future of Technology and Innovation Centres”** is receiving a lot of attention from the Canadian Government and I had the honour to meet the Canadian Minister for Science yesterday to discuss how we collaborate in this area. Work to turn Visions into Action.

I conclude with some comments on another key ingredient we must stir into the mix in creating Brain Circulation and Collaboration in a World Without Borders. And it is a critical one – **“Education Without Borders”** – engaging the Next Generations I have spoken about – children at school – and students at Universities and colleges. We need radical new approaches to supporting learning and development – and we need to break down barriers between Academics and Students and Society. I could spend a half day at least on this – but don’t have the time. And you know – the

students are not waiting for us or the locked away academics. They like the Chinese – and the movement includes a lot of Chinese students are on the march. Some of us oldies are marching beside them and carrying banners. Student Creativity, Entrepreneurship and cross cultural activities are critical elements in my construct of a World of collaborations and without Borders. I have the great privilege to be a Trustee and advisor to an organisation which in one sense Canada has given the World. The national Consortium of University Entrepreneurs was founded less than two years ago – at Oxford University, by a young Canadian student – and it has grown dramatically fast – serving student Enterprise organisations in 70 universities in the UK and a growing number around the world as it becomes International. NACUE – for short – recruited 45,000 members in not much more than its first year of life. The young lady who made it all happen is here today – Victoria Lennox – and I and others amongst the entrepreneurial community in UK and elsewhere are proud to be named her colleague. Education Without Borders, Entrepreneurship without Barriers – Innovation and Brain Circulation – NACUE is collaborating with many organisations and inspiring and enabling many of tomorrow’s entrepreneurs. Victoria, I am sure, will be delighted to tell you more.

You have noticed I like history and collect the great words of great people. Let me end with just two more.

For those who are still struggling with that decision – to do something entrepreneurial – to begin a new initiative – entrepreneurial but maybe risky – here is what Johann Wolfgang von Goethe once said **“Whatever you can do or dream you can do – begin it. Boldness has genius, power and magic in it”**



And finally, Winston Churchill – who saw some tough times in his life – giving us again the WAY JEE message in plain English – when speaking of Optimism, he said **“A pessimist sees the difficulty in every opportunity – and optimist sees the opportunity in every difficulty.”**

**Alan Barrell December 2010.**