

Commercivity: The dreaded innovation process

By Rod Fountain and Peter Childs

Cast of characters:

Johnnie Moore – you have already heard some of Johnnie’s thoughts in the opening chapters. He is a writer and open space facilitator who works with big companies to help them access the strengths and desires of their workforce.

Roger Neill – he is director of the Centre for Creativity in Professional Practice at City University, London, and a former director of Saatchi & Saatchi.

B V Pradeep – he is Vice President Asia, Unilever Plc, Consumer and Market Insight.

Jaroslav Cir – he also works for Unilever at the sharp end of marketing consumer brands in Prague.

Bob Pinkett – he is a partner at the engineering consultancy Peter Brett Associates.

Dan O’Donoghue – he is the worldwide strategic planning director at advertising agency Publicis Worldwide.

Dr Carlos Zwikker – he is senior director with responsibility for marketing strategy and intelligence in the lifestyle incubator at Philips in Holland.

Dr Tim Bradshaw – he is head of the innovation, science & technology group in the Economics and Enterprise Directorate at the CBI in London.

Ed Smith – he is a cricketer turned writer and former captain of Middlesex and an England international.

Hugh Baker – he is head of operational architecture at Barclays in London.

John Kearon – he is the CEO of on-line market research company Brain Juicer plc.

Kieron Monahan – he is Global Strategy Director at advertising agency Lowe Worldwide.

Lionel Lopez – he is former risk director at Barclays UK Retail Bank and now works for Standard Chartered in Singapore.

Paul Feldman – he is chief technology officer at Barclaycard.

Lisa Ohlin – she is the former global head of insight at Cadbury’s.

Marc Lewis – he is a mobile technology entrepreneur and is re-launching the School of Communication Arts in London in 2010.

With the words of Johnnie Moore ringing in our ears we start to write this chapter. How do we begin? We realise that commercivity demands the commercial realisation of the value in an idea and that means most companies will see this as a siren call to invent an innovation process. We remain open to influence as to whether there is a process that could do more good than harm for most businesses. We shall see.

The best companies manage creativity with equal amounts of discipline and humility. Toyota, Procter & Gamble, Philips, Unilever, Lego, Nokia, and 3M are regarded as highly creative businesses with deeply rooted and well tried processes in place to generate powerful ideas and turn them into innovations, yet they also experience many failures. And it's just as well they do. Only at the point of failure is real learning possible.

In *The Game-Changer*, A G Lafley lists the things P&G is very good at, but the list is tempered with the many areas for improvement: “We have a lot of good ideas at P&G but there are still so many unmet consumer needs and unfulfilled consumer wants that we are not yet addressing. And, competitors too often come to market with innovation ahead of us.

“We have a disciplined innovation process but too often P&Gers drive through caution lights, and occasionally even stop signs. No process, no matter how robust, can overcome human lack of self-discipline. Many presume innovation stems from extraordinary creativity. Creativity is necessary – especially at the ideation front end – and creative problem-solving is necessary throughout development and qualification – but innovation requires exceptional discipline.”

He says most innovation at P&G is product innovation, and not enough new business models have been created. He says participation in, and responsibility for, innovation are broadly distributed and shared across businesses and functional disciplines but still not coordinated and integrated enough to produce consistently excellent results. Nearly half of all P&G's new product innovations fail. And perhaps most telling of all: identifying, developing and growing innovation leaders is not easy or quick.

However, P&G has managed to get its corporate head around the real purpose of creativity in business, and this has allowed it to push ahead positively with its innovation process. Lafley calls it ‘purpose-driven innovation’ – whose goal is more than sales and market share and profits – whose goal is meaningfully improving the everyday lives of the billions of consumers the company serves. The company succeeds in inspiring ‘heroic efforts’ on a regular basis to come up with new ideas and then to transform them into brands and products that enhance and improve daily life.

Rod: I feel the need to blurt out my initial feelings about what A G Lafley says about innovation. The first is that if they get a lot of good ideas and they are able to make some of them happen then that is a very good thing. The fact that competitors come

to market with innovation ahead of them is never ever going to change – and nor should it. No one company or person is ever going to be able to gain a monopoly on innovation in a particular field. If nearly half of P&G's new product innovations fail then that too is a great success! Most companies get nowhere near this level of success. I am surprised they find it hard to develop innovation leaders. After all, in the world of P&G innovation is merely a process and this should not be hard to lead. But most surprising to hear from the boss of a multi-national company is the complaint that some staff disrupt the innovation process by driving through red lights. I say that is the very least they should be doing! I wonder how P&G's approach compares to Unilever's Insight Activator process?

B V Pradeep: We have developed a tool to help with consumer connectedness and we have trained some freelance people in the UK and around the world to be the first points of contact for things like facilitated workshops or anything you might need as a business head. Whether you necessarily need to use this infrastructure is your call – but this facility is available. But generally what I have seen is that people do not operate in a vacuum so there is always a consumer connectedness session early on. You do your research and then go into an idea session with one of the creative agencies or facilitators. There is the whole thing about culture and environment for creativity as well. You can have all these processes but if you as the boss keep too tight a rein on the objective and imply that anyone that fails will get their hands chopped off then you won't get very far. People will take the easy way out. 'I want to keep my job' etc. People will back off and say it's too radical, my boss won't accept this. It might work in five years time but I will be retired by then. This is the kind of logic people tend to give: they say let's be practical, and these are the kind of things that kill off creativity.

Rod: There seems to be a hope that the creative innovators within the business will find their way to the surface. Are you satisfied this happens enough?

B V: There are various models we are looking at to improve our creativity. Creativity and experimentation and exploration is one stream and then running the mainline businesses is another one. The first is about being a little eccentric and open and challenging and the other is about robustness, validity, running a tight ship, ensuring the ideas are practical and can be brought to market. If you put one into the other then you will jam the system. In ideas sessions people come up with a number of good ideas but when it comes to voting on the ones to take forward you find the mundane ideas are the ones that get the votes because people are comfortable they can make them happen. We are now looking at the incubator model which is about taking a very small team, giving them a brief and asking them to experiment and test it and do whatever work has to be done and when it comes to the point where we have something tangible to show to the business, then you involve the mainstream.

Rod: Sportswear manufacturer Nike has a similar mindset and gives explicit senior-level support for risk-taking: actively encouraging people to fail. Management see their role as challenging their teams to take risks, and provide support to help this work. Instead of worrying about failure, Nike worries about whether they are creating enough opportunities to learn from failure. It's almost like if you fail once you get promoted, if you fail twice (so long as it's not for the same thing) then you become VP! President and CEO Mark Parker says great ideas can come from anywhere. He

thinks true brilliance is rare, but creativity in people is the norm and not the exception. The key is the ability to visualise what an idea can be, to elaborate on it, stretch, and poke and play with possibilities that can be brought to life in earnest and not just in theory. At engineering consultancy Peter Brett Associates staff are never happy with the status quo, they see their job as finding better ways of doing things even if this is not specifically requested by the client. To do this they make the walls of their company as permeable as possible.

Bob Pinkett: In our business we have to work with other professionals all the time, with town planners and architects and clients and others. Often we are bringing together perhaps 12 or 14 organisations to provide specialist skills. Someone has to act as the focus for that. We allow ideas to permeate in from others and we allow our ideas to go out. We are going into partnership with Mott Macdonald – a very big traditional company and one of our big competitors – to bid jointly for seven sustainable travel towns in Scotland. We don't have any offices in Scotland but what we have is a lot of the behavioural change kudos and academic reputation that they don't have. Some of my colleagues and other businesses might be concerned about this because we've shown them our rates, we've given over our intellectual crown jewels, I've shown them our techniques and methodology and handed it all over to a competitor because I know in the end that we'll still be the people chosen to do that sort of work because we've got credibility. So there is no loss in there but they were quite surprised how open we were just handing everything over to them. But I said to them if we are going to be successful as a real partnership, not me being a sub-consultant to you, but a real partnership to win these jobs in Scotland then you have to know everything we do and the price I charge my time out and how much my staff are and our strengths and weaknesses and stuff we don't want to tell you about but we've got to tell you everything. They now have one of our staff on secondment at their office in Altrincham because they needed someone good and couldn't find anyone. A lot of the way the company runs is about social networks and groupings and conversations and a lot of the ideas come out of this approach – sitting around drinking coffee and saying we could do this better.

Jaroslav Cir: There are a lot of rules at Unilever but I like to do things that are not necessarily within the guidelines and prescriptions. There is a different kind of creativity that is needed, a kind of short cut creativity: putting two or three things together that constitute a new way of seeing things and thinking about things. Not everyone is able to do this. I say it with lots of conviction now because I have been in the role for years. There was a time when I was more democratic in this approach and thought it would be good to include everybody in the process but I was wrong about that. I think it is much better to have selective teams of people that have that bit of an added spark and have a drive and a willingness – it's about having an attitude to really stretch their thinking. For some people their lack of creativity comes out of habit of not taking the job too hard and they may be on automatic pilot and not really giving their full attention where the brain is concerned. We used to have Insight Activator which was a really long and demanding process on time and money and getting everybody involved, but we have learned to strip this down to a few colleagues who know to achieve the result rather than a great participatory event. We still keep some of the elements. At the beginning, if you see this process as a funnel, it is good at the beginning to keep the funnel as wide as possible and to use people as a resource, to talk to them and to get information but then for the process of transforming this into

some kind of an insight you don't really need a huge team. There may be good theories in books but I need to get things done.

Rod: That sounds like potentially quite a dangerous strategy in a company with a clear innovation process.

Jaroslav: I am encouraged to experiment; not encouraged to fail. We have reporting lines that go to the head of research at Unilever and those lines are much more conservative and working outside the guidelines is not tolerated. But in the day to day job it is very different. One of the differences between a market researcher and a marketer is that the researcher is concerned about possibilities and the marketing people are concerned about results. Higher up Unilever I get a lot of support because they really appreciate a researcher being pragmatic because they don't see it very often. It is not only creativity for its own sake. All the big agencies we work with are using on line research and are buying data from the global data providers. Why don't we do the data providers and connect this global data that is cheaply available with intuitive individuals within and outside Unilever and get things done in 24 or 48 hours without a black box really cheaply and really fast. This excited me but it didn't persuade the research people too much because unconsciously they often feel they lose control. But it really inspired the marketing people. It liberated some of their thinking. Research could be used as a tool even for things like PR. I care much less about method and more about what we can do: the possibilities are so open. If the innovations are not disruptive I think as a rule of thumb the key is to be fast and establish it quickly. Trying to hide it would be counter productive. There is not an obsession of secrecy around innovation as there was some years ago. There is too much debate and too many people saying that won't work. I've seen so many projects taking longer than necessary and meanwhile the market conditions are changing so when it finally comes out it is not a breakthrough innovation.

Rod: How do you try to overcome these big company constraints?

Jaroslav: Things get stuck at a very practical level: we couldn't make this or that in the factory. We need open innovation. We have all the potential to come out with the innovation creatively but if we had the potential just to work with anyone on earth to produce it we would be much faster and much better off rather than being stuck with the factory supply chain system we have. This really limits our opportunities because we can produce only so much. Another barrier to creativity is the ever growing power of the retailers such as Tesco. Sometimes we think about them too early in the process, we say oh look there is no point in thinking about it because Tesco won't put it on the shelf, it won't fit there. It becomes a real downer.

Rod: This is closer to the model of fuzzy management that Dan O'Donoghue believes is vital in creative enterprises.

Dan: Digital design and advertising agencies are obsessed with technology and don't have hierarchies. They are all creatives of sorts. They are all doing stuff and interacting with stuff. My feeling is the people are happy and fun to work with and always coming up with ideas. To some extent they don't really care whether it works or not: they kind of require the client to say whether it will work for them. This is breeding the ideas culture again. In the '80s and '90s business has been in the hands

of the finance people: everything based on numbers and people rewarded with bonuses for profit performance. Now everyone realises how bad these methodologies were. In the coming years it will be HR directors. There is one guy here that the HR people are saying we don't think we are going to keep him. I am saying what do you mean, he's the best guy we've got. But they say, yes but his attitude is wrong. HR has to be lightly applied. I don't feel I get any support from HR. They should be supporting the elements within the company that will help bring the creative idea generation back but they don't feel strongly enough about this. People are less career orientated. They want to get something more out of their job. People joining the workforce now have been used to playing and working at the same time. But they join a company and suddenly they have stopped playing. They think anyone over the age of 30 in the business is plain mad. They are depressed about this but they know they need money so then they have to work out how to get on in this business. Nobody speaks to them. They have 'faulty' behaviour and they like gaming. Then they notice the coffee machine and that everyone talks around the coffee machine and that's the place to social network. This is where they feel safe. We have got worse and worse at play in the workplace in the UK. We used to be good at it. My feeling is that the people working for the gaming companies will spread out into the business community eventually.

Rod: I think it was the demands of the industrial revolution that forced adults to put away their toys. 'Modern work is desperately serious,' Johan Huizinga observed in *Homo Ludens*, and that when utility rules, adults lose something essential in the capacity to think; they lose the free curiosity that occurs in the 'open, felt fingering space of play'. All is not lost, though. The creative design studio at shoe giant Clarks for example is full of toys. The innovation group at Clarks comprises a diverse set of individuals who come from different countries and cultures and have very different personalities. There is a great team atmosphere in the group and, according to team leader Chris Towns, they have succeeded in 'creating an environment of play', which he believes is essential for innovation to flourish. But most companies are less open-minded. Philips for example is now two years into its experiment with incubator units seeking ideas within each of its core sectors: lighting, healthcare, and consumer lifestyle.

Carlos Zwikker: Our role is to generate new start-ups that can land within the business. We manage it but the process is financed by the relevant sector. Eventually the project will be embedded within the sector and will be a new business unit. Before we created this unit creativity was all over the business. It was all based on technology push. We had loads of new technology ideas and a lot of people saying what are we going to do with all this? When we started this we visited a lot of companies that were active with corporate venturing to understand their ways of working and how they contributed to the flexibility and adaptability of the business as a whole. We frequently find out that another company is more active in a particular area but we don't compare success rates. We are more concerned with delivered proof that our vision regarding generating growth is sustainable and repeatable. The first thing we did was get ourselves reintroduced to the VC environment. Then we worked with contacts at MIT medialab which is a very impressive electrifying innovation environment. Then we tapped into the Sloan Business School for its business plan competition. We are trying to get our ideas or business plans or people into that kind of environment. We have connections in the Bay area of California. We

have just started relationships with Cambridge, Oxford, Barcelona, Amsterdam and next year we are moving into the Far East. We want people to know that if there is anything going on that is relevant to the Philips environment then there is a sign out there saying please submit your ideas.

Rod: What happens when people do submit ideas?

Carlos: We invite people to present their case. If we believe there is something in it as a management team we will take it on and say there is certain information lacking to enable us to decide whether to take it further. We give them homework to do which typically requires them to spend a few weeks looking at the business case. Either that person shows true entrepreneurship or not. We are looking for ideas that can generate around €500m worldwide over five to seven years. In two years we have created five businesses, three of which have landed – we have bought them inside the company. One we are spinning out because it didn't fit our strategy in the end. A second one was spun out but we had to close it. There is pressure to deliver. There is normally only one optimal moment for the introduction of an idea. Potentially one of the ideas that has landed could be worth €1bn worldwide. Our unit is about organic growth and it is the key driver for the whole business as far as that is concerned.

Lisa Ohlin: At Cadbury's we have a technique known as ALICE to help managers stay on track with the innovation process (Align, Leverage, Immerse, Connect, Evaluate). It starts with really understanding what your objectives are, identifying what you already have, immerse yourself into the world of whoever you are looking at, then bring the bits and pieces together to come up with the insight and then evaluate which you are going to take further and how are they going to be handled within the business. Processes by themselves are nothing too special but it is about how people use them. The part where you get the most opportunity is the connect part but that is the most difficult part because it requires a particular way of thinking to be able to make those connections. It is something between an art and a science. You can train for it and get better at it but there is also an element of having a natural talent for it.

Rod: I know Cadbury's was reviewing how it handles innovation. Is this the result of that review?

Lisa: We acknowledged there wasn't really a process. The global categories [chocolate, gum, and candy] are responsible for innovation. We are working a lot with external agencies and we tend to work with the process that that particular agency is using. If you really want to have innovation at the heart of the organisation and have the consumer at the heart of everything we do then we obviously need to have an idea of what the innovation process looks like from within. Then it is fine to work with creative agencies. What I see quite often is we have to come up with something quickly so they ask an agency to come up with something and very often they do brainstorm sessions and come up with lots of ideas but if you don't have a clear starting point then you can have lots of ideas but they are unlikely to see the light of day. We have set up category innovation centres to try to get game changing innovation. I think everyone can contribute to the creativity process because everybody has a view about what happens around them in the world. Even a bad idea

can be input into a creativity process because it may spark somebody else. It is for everyone but at different levels. I wouldn't want someone in finance to spend three hours a day coming up with creative ideas. But I do expect everyone to keep their eyes open. It is more of a mindset. We get the manufacturing people involved: what should the miraculous molecule look like? Facilitation is extremely important. Often it is important to work with agencies because their ideas may not be brilliant but they can be very useful at facilitation.

Rod: You put a lot of faith in creativity tools and techniques?

Lisa: In business it is not necessary to have people capable of making incredible paintings. But you can nurture creativity with the right tools, and these processes allow you to identify which people are good at it and which are not. A lot of market researchers are not very good at insight and coming up with the connections and the ideas. They feel threatened because they need to be good at insight as well as analysis. But I don't think insights should be the job of just researchers or marketers. People may feel they need to be good at something because it is part of their role but if you are not then don't worry – try to use those in your business that are good at it. People are protecting their own little worlds. You don't have to be superman or superwoman. You don't have to be good at everything.

Rod: Other companies take a different view. At Peter Brett Associates Bob Pinkett's job is to keep a guiding hand on the innovation tiller, whilst allowing staff as much freedom as possible to innovate. With more than 500 technical staff, the firm has to be highly structured but it also needs to be loose enough to embrace creativity and manage the resulting innovation.

Bob Pinkett: We have to know how much we are going to be spending next year, how many staff etc but we also go away to think about the longer term. We will build roads and bridges but we also encourage all our people to do very innovative work and to make sure they have a high profile in the industry. We never turn down a speaking engagement. We put a lot of money into training throughout peoples' careers. We also have a lot of informal cross current thinking, for example we have a behavioural change group within the company: so we can understand how to use stuff that is already built in a better way. We are big on process because a bridge can't not reach the other shore and we have no room for manoeuvre and we understand that but we also ask is it necessary to go from shore A to shore B. Are there alternatives? New initiatives are generally managed within conventional project teams, but staff are encouraged to make transitions within the business, moving out of their comfort zone. I have a nuclear physicist working for me and he is planning most of the London bus priority network. He is a thinking person and we thought he was exactly the right person for it. I am a geographer but I tell everyone I am a civic engineer. Our graphic designer was a transport planner. The woman who was my secretary until last year has a degree in travel and tourism and she said she could do this planning stuff so she is now a travel planner and I had to find another secretary. We allow people to make mistakes and learn on the job but we also supply a lot of hand holding. We try to avoid appointing in our own image because that just leads to clones.

Rod: In contrast Barclays manages innovation by looking hard at the numbers: for product innovation it is basically all that matters.

Hugh Baker: The people that have profit accountability for products are looking for ideas that will boost profit and create growth. They might have 100 things that could be valuable to do but the thing that determines whether or not an idea gets done is the numbers: is it one that is profitable. The most profitable ideas with the most attractive investment case get done. The process for handling creativity is well regulated but quite fragmented across the business. The larger the idea and the more expensive it is the higher up the hierarchy it goes until eventually the whole executive committee of Barclays will be considering it. For example we were the first people to launch a credit card into the UK which was a really big decision for us to make and was part of the creativity process. Game changing innovation is a once a decade event at Barclays.

Rod: What is the process by which new ideas are considered?

Hugh: It is the strategy planning process. Barclays is a bit like a single cylinder that fires once a year in its change process and it is all about how much we are going to spend next year on change. There is a six to eight month process of people who want to do things jockeying for position before the deadline for submission. That goes into the centre and it gets cut back. There need to be great financials or it's a must have because it is a regulatory thing or a pet project for one of the very senior people in the business. It's inflexible, slow, it drives us because of each of the businesses having their own investment funding leads to inefficiency at the back end. If you want to do something new you should create something whole not think what bits of what we have already got can we use to do this. You have to design the back end in order to accommodate the kind of things you are expecting to innovate around or to balance the value of variety with the cost of complexity. If you have ultimate degrees of freedom in the back end it will be very expensive. If you think about the car analogy the thing that is hard to change is the chassis and the wheel base because the factories are designed for cars of a particular wheelbase but it is relatively easy to change the rest of it. You keep certain difficult to change parts the same. I would say banking is at an earlier stage of maturity than other industries such as automotive. The driver of improving the manufacturing industry was global competition. If you want to be brutal about it it has never been necessary enough for banks to change. If you have one pound to spend on investment you get it back faster with better returns by spending it on the revenue side of the business by opening a new branch or introducing a new product than on fixing the supply side. The irony is you do so much more with your pound on the demand side of the business if you fixed the supply side, but that's another thing. A significant amount of creativity goes into changing the business. More brains are involved in trying to improve the performance of the business than introducing new products. Most change is about the way we do things rather than things the customer would notice. The proportion of stuff that is really noticeable to our customers is quite small.

Rod: The creativity process within banks is fraught with problems. There is very little game-changing innovation going on it seems.

Lionel Lopez: There are a lot of barriers. Investment can be a barrier; priorities can be because it may not be seen as a high priority; then there are political barriers. I can manage my team in risk as I want but as soon as we have to go to ask for help or

engage with people to support us it was a huge hurdle. We still faced silos where people said this is my department. One way to break this down was to create a project team and get cross-functional people to work on the team. You have to get it sponsored by a senior manager. As soon as you go outside your department you face issues of business priorities elsewhere and you run into the battle of the business case again.

Roger Neill: We need to live in a world that has a balance between the drivers of innovation and the operational drivers. Businesses that are totally run through their operational systems always end up dying. They may take a long time to die because they have very good operational systems but in the end someone always comes along with a better mouse trap. It is absolutely inevitable. Coca Cola did practically no innovation for decades – they focused on being within an arms reach of desire. Everyone knew this was the name of the game and it grew the business decade after decade but they ignored the fact that consumers were saying we want natural products and healthy products and the business went into a steep dive and they are only just pulling out of it now. They were completely operationally driven.

Rod: Innovation can be a very slow process. But what is the right speed at which to move ideas forward?

John Kearon: You need to build momentum before it is possible to make an impact. It takes much much longer than you think it should to get inventions of significance to reach their full potential. You need to build a following. I remember when Google first came out one of my internet savvy friends said I should have a look at it but there seemed to be nothing there. I had a go and it seemed to work but people forget how long Google was around for before people really started to use it.

Rod: Ron Adner, Associate Professor of Strategy and Management at INSEAD, refers to this as a need to understand the innovation ecosystem of which the idea is a part. Once the idea for a new product or service has been developed, the temptation is often to get it to production stage as quickly as possible. But an innovation generally requires much more to be considered than the core component. One example, says Adner, is high-definition television: top-quality HDTV sets were ready for mass market in the early 1990s. But critical supporting elements — signal compression technologies, broadcasting standards — weren't. By neglecting to ensure that the development of the sets themselves were in synergy with that of the 'supporting elements', the enterprising companies were in a position where their massive investments were left redundant; unusable and unsellable for over a decade. Or as Adner puts it, they were 'offering a Ferrari in a world without gasoline or highways—an admirable engineering feat, but not one that creates value for customers'.

Peter: Most marketing managers at the head of bringing an innovation to the public domain must work alongside other companies whose own innovations, or existing products, are integral to the success of the core design. When these other components need their own development process the margin of error significantly increases. A business plan which fails to accurately account for the risk involved within *each stage and element* of the innovation will produce unrealistic targets and expectations (most commonly by underestimating timescales) which have a high chance of being missed. A compulsion to rush a new, potentially revolutionary product out into the market

before consumers can use it – or are even aware that they need it – is likely to result in much of the time and money put into the project having been wasted, and gives rival companies the scope to develop their own similar products by the time the innovation can actually be sold. Thus the initial frontrunners are forced to compete in a market they could have had a monopoly on.

Rod: Yes. The key to successful innovation strategy, according to Adner, lies ‘not in being the first to put down a piece of the puzzle but in being the first to put down the last piece of the puzzle’.

Peter: This is an important point, to do with knowledge flows – the movement of ideas across the economy. Engaging in the innovation process is often described as ‘standing on the shoulders of giants’: inventors build on the work of those who came before them.

Rod: Ajay Agrawal, the Peter Munk Professor of Entrepreneurship at the Rotman School of Management in Toronto, has a lot to say on this subject. He has studied how people learn about the advancements others make and his research has found ideas to be amazingly ‘sticky’ geographically. Ideas are not heavy like concrete and thus are not expensive to ship, yet they tend to remain quite geographically localised. Why is this? To really understand an idea, it seems that you not only have to be able to read the published work but also talk to the person who created that work. Agrawal says: ‘Part of this has to do with the publishing system. Only ideas that work successfully are published. A scientist might run 20 experiments and the 20th finally works. But the scientist has actually learned something from the first 19. For the person who wants to build on that finding or apply it in a different setting, knowing what was learned from the other 19 experiments can be quite helpful. If the scientist is geographically close, the other inventor is more likely to be able to talk to them and thus learn about the findings that weren’t published but are useful for advancements. Innovation and knowledge flows are at the centre of economic growth. When companies and individuals invest in innovation and expanding the realm of human knowledge, they do so for their own selfish reasons – out of a desire to publish their idea or to invest a desirable product, for example. Yet in the process of pursuing these selfish interests, they create a public good – they create knowledge that other people can use. Suppose I invest one million dollars to generate a piece of knowledge that underlies a new product that will generate two million dollars in sales. Setting aside interesting issues concerning intellectual property protection, people who wish to build on my million-dollar idea may utilise it for much less than it cost me to generate that knowledge. My innovation creates value beyond my own cost-benefit calculation (a one million dollar surplus). I might not intend to create value for others, but it’s an important side benefit since it raises national productivity and thus drives economic growth.