

MAKING INNOVATION WORK

Simon Jones

Media Lab Europe

Simon-Jones@Simon-Jones.com

WHY INNOVATE?

Slow and steady seems a pretty good way of working. If it ain't broke, don't fix it, make the assets sweat to maximise return on existing investments. Unfortunately, if an organisation doesn't innovate then sooner or later it is going to be overtaken. Perhaps there is nowhere where this is truer than the Information and Communication Technology (ICT) industries, where technology lifecycles can be as short as months and where there is always a small start-up waiting to replace a business model that has served many well for years.

Taking a more developed view of innovation, it is fairly well accepted that innovation extracts the most value from assets new and old and in a culture where consumer demand and technological opportunities change faster and faster, an approach based on innovation may well be the best opportunity afforded for long-term survival.

Across most of the world there is a general belief in the need to innovate, to revolutionise industries and to shake up tired and lacklustre sectors of society and business. A widespread approach to this has been attempts to create an 'Innovation Culture' where disruptive high-technology solutions are seen as a key element of future prosperity. A particularly frequent way of moving towards such a culture has been the creation of 'Innovation Centres'. Usually these centres address high-technology innovation and are created with a mixture of University or similar research centres partnered with industrial sectors. Almost always, these centres are created or at least heavily sponsored by the public sector.

Why then have so many of these centres not succeeded? Some have simply not left a mark, others flare briefly but brightly only to disappear or be absorbed within a more established and settled organisation and others career seemingly out of control ending in a sometimes dramatic form. Why is it so difficult to make them succeed and to remain sustainable? After all they are

usually formed with a great deal of good will, good people and the genuine support of industrial sectors. Surely such organisations having a mandate to pursue the unknown and unhampered by large bureaucracies or cultural and operational baggage should be almost guaranteed success?

This article tries to recount some the experiences, successes and pitfalls in the practical elements of creating, sustaining and exploiting the work of high-tech innovation centres. Much of the experience has come from my work of 20 years in the high-tech research sector and more recently and specifically as Managing Director of Media Lab Europe, the European Research Partner of the MIT Media Lab. While my own experience is euro-centric and Media Lab Europe is located in Dublin, Ireland, I believe many of the principles and practices will apply to most high-technology innovation centres around the globe.

Media Lab Europe (www.medialabeurope.org), a private, not-for-profit company was formed in 2000 as a result of an agreement between the Irish Government and MIT Media Lab Europe (MLE) was set up to be the European Research Partner of the MIT Media Lab. Its' remit was to take the entrepreneurial, buccaneering style of the MIT Media Lab and make it happen in the multi-lingual, multi-cultural context of a rapidly growing European Union. Like the Media Lab it aimed to undertake disruptive research in the design and application of new technologies for Multi-media, HCI and learning. Its' funding was initially guaranteed by a start-up fund from the Irish Government and its' remit was to be financially sustainable via sponsorships from the public and private sectors.

Now in 2004, MLE is around 150-strong with 6 vibrant research groups and a clutch of partners from both the private and public sector. When people visit us and see our work, they inevitably remark on the excitement of the inventions and the vibrant creative atmosphere within the Laboratory. Of course it wasn't all straightforward: MLE like many organisations in the forming stage had to cope with multiple expectations, a complex operating environment and something that forms part of the charm of almost all research centres, the permanent hunt for sufficient funds. Nonetheless Media Lab Europe has had sufficient success to argue that some of the lessons learned and experiences gained offer a useful guide to what to do and how to respond when things go wrong.

THE INGREDIENTS

If we define innovation as disruptive invention leaping over established approaches and arriving in a brand new space and perspective then at the heart of innovation is the bringing together of diverse skills, perspectives, experiences and dreams. The clash of approaches, methods and visions is the spark necessary to ignite the fire of innovation. Equally in the way classical greek authors understood only too clearly, the downfall of innovation centres also lies in this clash of

approaches which if not handled carefully, can result in at best ineffectiveness and at worse downright destructiveness.

Inter-disciplinarity

Disciplines generally do not innovate. Indeed, it might be fair to say that once something becomes a discipline most of the innovation will already have occurred or escaped. So we are always looking at the point where 2 or more disciplines interact or best of all in a space which people feel does not have any disciplines to represent it. It seems clear that only in a space of few or no orthodoxies and where the inhabitants don't belong to factions or clubs or societies that innovation can occur. The selection of such a space represents a big challenge. Approval and agreement to create an innovation centre usually requires the buy-in from established disciplines that traditionally have influence over governmental or research funding agencies. Thus we find innovation centres linking IT and an engineering discipline or some aspect of human sciences. More radically, centres which connect the arts with the hard sciences (a la' Media Lab) really do take very different disciplines and connect them with each other. Further enhancements include the connection of academics with practitioners and users. As yet few have been brave enough to link the skilled with the unskilled – a curious prospect indeed - too tantalising to avoid forever but too scary to be readily embraced,

People

It is widely said that people are the most important part of an organisation. It is probably most true for innovation centres. Without a core of dynamic, talented, wilful and generally exceptional people no innovation centre will flourish. Such people are a rare resource given the skill set needed from them and are in correspondingly great demand.

What sort of people do you need to make a great innovation centre? As a set they need to come from many different disciplines. The diversity of approaches is a prerequisite for any sort of spark. Here at Media Lab Europe we have engineers, scientists, artists, film-makers, games designers, philosophers and for a short while even a dancer or two. However if you take people from these disciplines and just put them together relatively little tends to happen. Typically, the work required to understand profoundly each others perspectives and the patience and forbearance while things are done or explained in a very different way to the ones they are used to will tax all but the most dedicated. Time and time again I have seen talented, energetic people fail to reach the depth of understanding needed to cross disciplinary boundaries. This problem has been particularly manifest in people who have spent their careers in universities where often they are encouraged to stick to what they know.

So you need a very special type of person not only at the top of their technical skills but with a mindset that predisposes them to interdisciplinary work. How do you identify such people? Well some track record in successfully doing interdisciplinary work is a good place to start. People who have done multiple degrees in different subjects, people who took their original specialisation and worked in a different industry all are promising candidates but above all I think a key factor is some evidence of a 'hinterland' that demonstrates a cultural, technical or artistic baggage that they have developed along in their life and continue to develop today. This is not the concept of the 'Gifted Amateur' so appreciated by the British but more of a 'Gifted Professional', a new Renaissance man or woman if you like, as comfortable with a Bluetooth stack and peer to peer protocols as they are with Rap and Foucault.

Generally such centres need a director or CEO. Again the job specification is extraordinarily demanding. A high level of technical skill and a track record of research is a prerequisite for credibility with the other researchers. Equally, the director must be able to manage gently and cleverly a large number of extremely bright, questioning 'iconoclastic' individuals and get them to work in teams on high-risk projects. Adding to the requirements, he or she needs to work flawlessly with stakeholders and sponsors as well as provide the PR front for the organisation. It is a tough specification and rare is the individual who meets all the requirements all of the time, but without a director who can switch from being a charismatic innovator to prudent steward of a complex organisation, an innovation centre either becomes lacklustre or spins out of control. In either case, without both of these capabilities in the director, innovation either doesn't occur or can't be connected to sponsor or stakeholder needs. Once again another challenging and essential element in the complex mix needed for innovation.

Churn is another aspect required by a successful innovation centre. Above all one needs to avoid being settled and stable in order to remain fresh and compelling. However, human nature often values a settled environment. The moment an innovation centre starts saying 'this is the way we do things around here', it is pretty much finished as an exciting entity. Staff churn - bringing in new people constantly is one (if not the only) highly effective way of ensuring freshness. At Media Lab Europe all our junior research staff are on fixed term 2-year contracts and we never renew them. Our Senior Researchers (Principle Investigators or PI's) are on a 3 + 3 contract (broadly equivalent to the MIT tenure track). Even the MD is on a fixed contract. So from top to bottom, there is always change, always new perspectives, comfort and conformity are always questioned and challenged.

Clearly we are looking for a very special set of people, they are in high demand, often extremely wilful individuals, inevitably challenging all decisions and approaches and hence occasionally taxing to manage. However, finding these people and enticing them to your location with salary, working conditions and locale is still not enough without the right sort of projects to work on and the right processes to manage it, experience shows it still won't deliver innovation in a sustainable manner.

Projects

The right projects are one of the essentials in turning a multi-disciplinary set of people into an inter-disciplinary team. Here at Media Lab Europe, we call them Demo's and the Demo exists to make the complex concepts such teams produce tangible and to provide a focus for others outside the team to analyse, assess, critique and exploit the concepts.

A multi-disciplinary group needs to spend some time talking with each other, trying to develop a broad understanding of the technical areas represented within the team and some current hot topics. Out of this there needs to come a 'concept' something they can all buy into, Examples of Media Lab Europe concepts are 'If Human Beings could invent another sense, what would it be?', 'How do you take learning out of the classroom, out of the book and computer and place it firmly in everyday events' Out of these concepts came our E-sense and Everyday Learning research teams. So far so good, however, leaving it at that will generally result in the team members each looking at their own aspect of the concept. That may be interesting but it is hardly interdisciplinary and rarely innovative. One way around this is to require the group to build a demonstration of their concept as a means of articulating the idea and its' potential. For example, one project is Myophone which uses custom-designed vibro-tactile, wireless-enabled skin patches to tell people about incoming calls and enables them to control it via muscle twitches allied to spectacles with inbuilt displays in lenses and frames to communicate information. Another example is 'Smoke Rings' a brooch or badge which monitors your location and exposure to tobacco smoke through the day. Wearing it for a few days it starts to give you advice about which places to avoid at particular times to minimise exposure to carcinogens. These demos are vital in getting the team to work together, to understand each other and to make clear to a much wider community the meaning and potential of their work.

Leadership, Management and Management Processes

Generally discussing the above heading is an easy way to create shrieks of outrage from some of the innovators within the organisation. In practice, like the selection of people and the demo culture, the management and management processes represent another essential component in making an innovation centre deliver value, consistently innovate and be sustainable. One of the keys is to do it in as light-weight and informal way as possible when interacting with the staff of the centre but for it to be significantly more formal, visible and consistent when dealing with the stakeholders and sponsors of the centre. Managing such centres sometimes seems like the task that modern fighter aircraft systems have. The entity is fundamentally unstable, but it is precisely that instability that gives planes their agilities and similarly innovation centres the twin capabilities of flexibility and focus. Focus to deliver results and flexibility to change direction when new possibilities emerge.

The task of the leadership of the centre above and beyond the usual managerial responsibilities is to create vivid, dynamic, highly-creative research teams and keep them focussed on producing technically-credible demos that articulate value to sponsors and prospects alike. As such it needs to provide a loose organisational structure internally to allow agility and diversity to flourish among the teams, yet carefully, sometimes apparently casually, deploy judicious interventions to prevent projects spinning out of control and unproductive conflicts within and between groups. Furthermore, the leadership needs to ensure the groups communicate value to sponsors and also act as a confidante, philosopher and elder statesman to help innovators cope with the failures of their work (they tend to handle success quite well unassisted). It is important to remember if it is an innovation lab many things should fail, the research teams are similar to rock bands - they will be remembered for their successes not their failures. Finally the management have to act as a project terminator, many groups are highly reluctant to kill projects, perhaps as a way of avoiding acknowledgement of failure and it is often best done as a management decision.

The importance of failure should not be underestimated. Many research organisations go through elaborate risk analysis and risk management strategies as well as complex evaluation processes prior to committing to a project. For an environment with a stable technical domain and a clear set of requirements this is entirely sensible. When you are specifically addressing a nascent field and wilfully choosing to aim at a high mark on a distant wall, failure is very much to be expected. How you cope with failure and learn from it is another key element of an innovation culture. Perhaps one of the most talented individuals I have ever met, had large numbers of unsuccessful projects, yet he had the gift of making the right sort of mistakes. Failure of a project often leads to an even more radical and exciting idea, he had the capacity to derive new innovation after a series of apparent failures. This is what we seek for innovation to flourish.

The leadership of an organisation as an absolute must, needs to create a culture where we celebrate success and do not deride failure but treat it solely as a stepping stone on the road of success. North American culture is generally better at this than a European one but without this single-minded focus from the top on seeking success, the cautious mindset will often assert itself. Indeed, the leadership of an innovation centre will almost inevitably come under pressure from its' stakeholders, often governmental or corporations who historically have required complex failure-avoidance processes and may find the buccaneering spirit of such a centre one thing in theory but an entirely different thing in practice. Defending the innovation teams against this pressure and constantly articulating the role of the organisation in producing disruptive high-risk research is a task never to be neglected. This is but one example of the interaction between the stakeholders (typically a governmental/foundation and/or a private corporation) and the suite of sponsors of the laboratory that the leadership of the organisation must address as another aspect necessary for success.

Stakeholders and Sponsors

Innovation centres are often set up as a result of a governmental push to address the area, an endowment from a foundation or via a large corporation. These are the stakeholders of an organisation. They have a long term interest in seeing it achieve its' goals and also have a role in acting as a cheerleader in government or other domains.

Innovation centres also have a number of sponsors who engage with them to undertake research. The role of the sponsors is many-fold. Firstly they provide funding to enable research to be undertaken and in the long-term many centres are required to obtain a significant portion of their funding from sponsors. Furthermore, sponsors bring their problems, opportunities and perspective to the laboratory, provide important input into the creative process and have strong expectations of being able to harvest value from the work of the innovation centre.

As such the interests of the stakeholders and sponsors differ. Both look to the generation of Intellectual Property and the creation of value. In addition, the former seek prestige and size as indicators of impact and importance. The latter require demonstrable pull-through from individual outputs to income generation.

The task of leading such an innovation centre also involves making sure both stakeholders and sponsors feel satisfied. Innovation centres typically spend a significant amount of their time hosting visits for the stakeholders and generally participating in the activities that major intellectual assets are expected to do within a region or country.

Sponsors both current and potential also require a great deal of effort from management and staff over and above the execution of the individual projects. Firstly, significant amount of time needs to be spent hosting visits, events and seminars for sponsors as well as sending research staff to contribute to sponsor events. Furthermore, the requirement to continually add more sponsors – to get to critical mass in the initial states and to replace exiting sponsors demands both an effective visit organising operation and a very substantial load on key members of staff. At Media Lab Europe we have at least one visit a day (the Boston Lab averages around 3) and about 30% of our research staff time is spent talking to sponsors, prospects and stakeholders.

The research staff will sometimes complain about the amount of time and effort they have to put into this and it is important to ensure that visits are efficiently organised and people know who and what people are here for. However, this proportion of time spent on visits is absolutely essential for success for 2 very different reasons. The more mundane is the acquisition of funds to support the laboratory. This often assumes an increasing importance as the initial start-up funds run out, sponsors start looking for returns and initial sponsorship agreements start to time

out. It is very easy not to make money doing innovation. You are asking people to take a risk on highly-speculative, possibly long-term research in competition against a larger number of shorter-term requirements.

The second reason why significant number of visits is important is to do with providing additional perspectives as a key requirement for the innovation process. It is another input into the inter-disciplinary mix. A good example of this from Media Lab Europe is 'Palimpsest' originally designed as a mirror that remembers who looks into it – an artefact for the home to check up what your children have been up to, if you like. Showing this to the retail sector was an instant hit. They saw a way of showing customers what combinations of jumpers, ties, hats other customers had tried on. Without this constant flow of diverse sponsors such a perspective would never have been delivered.

This leads to one more requirement for innovation. Projects sponsored by a single sponsor rarely innovate as too few perspectives are brought to bear. This can be a hard task to persuade a sponsor, they often want specific research yet experience time and time again in the Media Lab has shown that bringing multiple perspectives to bear consistently delivers more exciting ideas. At Media Lab Europe we take this to its' logical conclusion, All sponsors have access to all projects. Sponsors effectively pay a membership fee and as a result have access to all the work in the laboratory. They rely on their ability to take an interesting idea in-house and then customise it for their competitive advantage. In return a relatively small subscription provides access to a great deal of innovation, a model of funding that scales very well.

Delivering Value

Well we've come a long way in this article; we have an innovation centre, with good staff, talented leadership, great support from stakeholders and a clutch of enthusiastic sponsors. Now of course they will seek value from their investment. At this point yet another set of skills need to be deployed by the leadership of the laboratory – spinning out product and licensing technologies.

Certainly within a European context, universities and similar research centres seem to have a straightforward model of commercialisation – the inventor-led start-up. Indeed, some UK universities have small hamlets of high-tech start ups: an overworked professor, anxious research assistants now really having to make the invention work and perhaps a business person trying hard to understand and simultaneously focus people whose previous *raison d'être* was to keep doing something different. Almost inevitably they are undercapitalised and suffer a consequential high attrition rate.

While start-ups certainly can form part of the ways in which innovation is spun out of an innovation centre, it should not be the only approach and certainly not the default one. If nothing else, spinouts mean you lose key elements of your staff. Licensing of technology is much more important. The demo-based approach means the laboratory will have advanced exemplars of what can be commercialised. A sensible IP policy should have resulted in patent protection and elements in the design to prevent copying or modification. Innovation centres will also have a number of sponsors who will wish to exploit the technologies developed under their sponsorship. Licensing seems a much more suitable model for doing this. Licensing the technology and supporting the licences by access to the inventive team meets many of the needs for successful commercialisation and continuation of the Lab's work. The sponsor (generally a large company) has resources and infrastructure to develop the technology. The centre keeps key staff, they can continue to work on their next set of ideas and still support the commercialisation by contributing their skills and knowledge.

Sponsor and Prospect interaction

While doing the above will start-up and create some interesting innovation, sustainability requires effective mechanisms for satisfying sponsors and wooing new prospects. Usually this becomes increasingly important to an innovation centre as the initial start-up fund declines but it is more prudent to treat this topic very seriously from the beginning. No-one should underestimate how hard it is to sell the prospect of innovation.

Sponsor relations is probably the easier part of the 2 tasks. There are generally 3 elements within an organisation which need to be addressed Firstly business and marketing (colloquially referred to as 'stuff for today') need access to innovation for current products, access to staff to present at events and access to the organisation itself for marketing-led events, The product development and R&D units ('stuff for tomorrow') need access to demo's, access to staff for consultancy and advice and interaction via technical thought-forming/thought leading workshops and connection of company personnel with the wider scientific community. Finally at the VP strategy level ('stuff for the long-term') the organisation needs to provide a beacon through some exceedingly misty technological landscapes to possibilities for a brand-new future for the sponsor. All 3 need to be delivered on to ensure a successful relationship. Missing out on any one of these 3, experience shows, will not result in a sustainable partnership.

Delivering on all 3 requires a process to ascertain and respond to these 3 elements of a sponsor. At Media Lab Europe we have a sponsor management process that meets every 6 months with each partner individually, and identifies our deliverables, their appraisal of us and future actions required by partners. Internally, each research group meets with the partner management team every 3 months to identify new and intended deliverables as well as to propose changes to their

research agenda to reflect partner requests. Generally this works pretty well but at an organisational level maintaining the '3 Stuffs' (Stuff for today, tomorrow, and the long-term) requires constant attention and monitoring by the leadership of the organisation.

Prospect interaction is an intensive operation and crucial to the sustainability of a centre. It needs to build on an effective sponsor management process. Without happy sponsors there is little prospect of attracting new prospects. Over and above that prospect recruitment needs many of the attributes of any sales and marketing operation. However, the key difference (and difficulty) is in the nature of the proposition. Innovation centres are by definition selling something uncertain, indistinct and hard to evaluate, harder to define and harder still to value: the prospect of something new, revolutionary and upsetting to established operations. This is intriguing for prospects to consider but sometimes difficult to justify when faced with competing, established and measurable opportunities. Key to success seems to be the following: Brand, Costs, Exploitable Assets and Case Studies.

At Media Lab Europe we sell heavily on the MIT brand, we are their European Research Partner, have outstanding links with them and many of our staff either have worked or studied there. This essence of credibility and world-leading people is essential. It is very hard to imagine such a centre succeeding unless tied to an outstandingly strong research organisation/University. Costs matter too. Innovation centres usually incur higher costs than Universities, which can hide many fixed costs in the student-centred element of their work. At Media Lab Europe our subscription model, where sponsors pay a fee in return for access to all the work (on a non-exclusive basis) at both Media Lab Europe and MIT Media Lab, offers very good value to partners and enables us to sell the same research more than once.

In contrast, taking a directed research model, yields high costs and significant IP management problems. Exploitable Assets include classical IP but perhaps more importantly know-how and the people involved in the organisation. Dissemination of IP via licences is one thing, disseminating a set of talented individuals with know-how and a brand new approach adds enormous value to the sponsors. The wise laboratory manager and sponsor would do well to ensure this flow is suitably exploited. Finally case studies are a surprisingly effective way of demonstrating the link between innovation, its' varied and unpredictable path through to value creation. The wise innovation centre would do well to have stock of such studies to hand.

SUMMARY

Innovation is not an easy task, the prerequisites for success and the obstacles that can ensnare it are many. However, the ability of an Innovation Centre to develop the regeneration of areas or to compete internationally in the high- added value sector of economies is formidable and can truly be said to be the spark that lights the fires of renewed prosperity and growth. Like all

worthwhile things they are rarely easy to achieve and hard to maintain but undoubtedly worthwhile in their impact on economies, communities and people. I hope this article will help others to develop their own innovation centres and perhaps avoid the some of the pitfalls so many run into.