

Dragon O’Sullivan Identifies Ireland’s Critical Constraint

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The Critical Constraint

Living is about dealing with constraints – physical, economic, social, emotional, psychological and environmental. And a successful life is about knowing which constraints are critical, which are the ones we can do something about, and acting accordingly.

Justus von Liebig (1803-1873) was a German chemist who created the modern laboratory. He was recognised as the greatest chemistry teacher of his and perhaps all time, and the father of the fertiliser industry. His Law of the Minimum – “by the deficiency or absence of one necessary constituent, all others being present, the soil is rendered barren for all those crops to the life of which that one constituent is indispensable,” is a fundamental insight of huge and continuing import. By identifying the constraining nutrient and then applying it, we can release the heretofore dormant productivity in the soil, and thereby undermine the gloomy forecasts of Malthus (1766-1834) – “The power of population is indefinitely greater than the power in the earth to produce subsistence for man.” Von Liebig epitomised the best that the academy has to offer. A focus on the essential, married to great insight, theory verified by careful scrutiny of evidence, carried forward in application and through his teaching.

In Ireland, we face many constraints, but the debate is largely uninfluenced by Von Liebig’s thinking. Little effort is made to identify key constraints that we control; we debate endlessly choices that are not relevant in terms of what we can do, we make propositions largely uninformed by evidence, and generally lack focus on what is possible that would make a real difference.

But there is one exception – Sean O’Sullivan; he is an American of Irish parents who founded many successful technology companies, including [MapInfo](#); he now bases himself in Kinsale, County Cork, managing his venture capital company and leading his company Avego, a web based system aimed at revolutionising personal transport: “Anyone can turn their car into a bus, saving time and money by picking up passengers along their route”.

He sees Ireland becoming the technical hub for the ICT business in Europe, the continent’s Silicon Valley, on the basis that Ireland is very attractive as a place to do business, work and live – English speaking (the international language of the ICT world), peaceful, sociable, mild weather, good infrastructure, connectivity and education, high quality environment and culture, low corporation tax and favourable taxation of R&D. And we have made a great start. Ireland has a leadership position in Europe in IT, evidence being the fact that

Microsoft, Facebook, Google, Intel, Apple and EMC have chosen Ireland as their European headquarters, all with very substantial numbers employed, and billions of exports, which contribute to the substantial trade surplus Ireland enjoys with the rest of the world. He argues that every job in industry generates 5-6 jobs in the local community.

But, in terms of maximising the potential of his company, and that of his fellow leaders in new enterprise development in software and information technology, he has identified a key constraint and a solution. His argument on constraint is elaborated in [Open Ireland](#) and it goes as follows:

- Growth is now critically constrained by shortage of appropriately qualified design engineers who create the software and hardware products for export. Companies like Google import up to 80% of their talent from abroad. These are 'uncommon' talents, only available in the top 1-3% of any graduating class. They are the 'oxygen' essential to continuing survival; there are approximately 20,000 unfilled positions in ICT in Ireland.
 - Ireland on its own cannot supply the talent needed if we are to become the Silicon Valley of Europe.
1. Ireland's top 1-3% of graduates number 2000-3000; most of these go into medicine, law, and accountancy, and not every engineering graduate has the uncommon design engineering talent needed. It takes 'years of effort and some innate preference and talent for someone to become a great technical talent'.
 2. The same people behind Open Ireland are behind the CoderDojo programme; over 2000 children (2nd level) meet weekly in over 2 dozen locations to learn programming and design. This will take 10 years to bear fruit, and the need is now.
 3. Retraining could supply about 10-15% of the (very specialised) skills required.
 4. Irish tech companies are increasingly outsourcing, but this is expensive, cumbersome and limits the benefits of expansion accruing to Ireland.
- The system of giving work permits allowing the hiring of technical talent from outside the EU is "flawed and bureaucratic, especially for Ireland's own companies....involves running advertisements in national newspapers, posting job openings to government web sites that don't actually result in qualified applicants applying..smaller companies cannot navigate this labyrinth well, and no company can do it in an agile or inexpensive way."

How valid is his case?

When you have the privilege of meeting with the business community in Silicon Valley, California you are struck immediately by how many foreigners of great energy, talent, entrepreneurial ambition and occasional charm are involved and leading the charge, often

having entered the US initially as students at the adjacent universities (Stanford and Berkeley). O'Sullivan notes that 40% of San Jose's population are immigrants, but the US is now so obsessed with securing the homeland militarily that it is making it more and more difficult to hire people of talent, creating thereby a gap in the market. And many of our European neighbours are also busy making sure that they too are uncongenial to 'outsiders' of talent, energy and ambition.

His argument in one respect strikes me as over-blown. A small open economy, where most of what we buy is imported, has low multipliers, more like 1 rather than 5-6. But the big payoff in any event is likely to be the entrepreneurial dividend – those who come as employees, but evolve into entrepreneurs.

And he does not address the puzzle of European capacity – in a population of 500 million, all of whom do have access to Ireland without needing work permits, are there not exceptional talents we could find ways of attracting and keeping here?

What Next?

Overall, I find the case he makes compelling. Our strategy should have the following features, undertaken in parallel.

- Foster CoderJojo by giving recognition to those of the 2000 second level students who participate with distinction, giving them special recognition and status, helping them to go to university, work as company interns, and fulfil to the maximum their talents and ambitions. The fact that this is a bottom up initiative, untrammelled by bureaucracy means that a 'light tiller' in this regard is essential.
- Recognizing that the pool that can be re-trained successfully in this niche is limited, we must do what can be done to make sure that this transition is available to those with the capacity and the inclination to do so.
- Examine the characteristics of the EU talent pool, and how to better access what our neighbours have to offer.
- Finally, use the IT sector as a pilot to find a way to make it easy to bring the best and the brightest to our shores, in ways that make them feel valued and wanted. [I worked at different stages in France, Germany, Switzerland, the UK and the US. I still cherish those moments when my presence and contribution were recognised and affirmed.] A specialist team anchoring the assessment process, with relevant technical skills in advanced software and design, that makes decisions quickly, is probably the most essential requirement. This will be a 'learning by doing' exercise that can be incrementally extended to other sectors if an equally compelling case can be made. And we should call the work permits 'von Liebig Visas'.