ILE STRAND 3: INNOVATION, SYSTEMS AND SYSTEM LEADERSHIP

Valerie Hannon

(Board Director, Innovation Unit UK)

Introduction

The ILE program focused in its early stages on the exploration of individual learning and teaching environments. As the profiles and dynamics of these diverse arrangements became clearer, the issue of how to move from exceptional environments to systemic change came more sharply into focus. With this arises the question of how system leadership might accelerate the shift towards learning environments better suited to contemporary demands. Underpinning these issues lies a new question: what, in today's conditions do we mean by 'system'?

The importance of this question cannot be overstated. Our lives are profoundly conditioned by the quality of the systems around us. One of the defining characteristics of civilizations is their capacity to create systems. And then the really successful ones learn, not just to preserve those systems – whether they are about food production or money or communications – but to update, even transform them, for changed conditions. The phenomenal success of systems created during the agricultural and industrial revolutions powered population growth and economic prosperity; for example, the rise of public health and hygiene systems lengthened life-span and quality. But changed conditions – sometimes arising from the very success of the initiating system – gives rise to an imperative for change. Such is the case with the exploitation of fossil fuels for domestic and industrial energy. Like many of the systems on which we depend, the energy system is ripe for radical transformation. There is some reason to suggest that a similar, though perhaps less existentially threatening, challenge confronts the education systems in developed countries; and offers opportunity to countries where education systems are still evolving.

The growing complexity and interdependence of modern societies, combined with the exponential penetration of digital and other technologies into every dimension of contemporary life has led to a preoccupation with the nature of systems, and what is entailed in innovating at system level.[1] Accordingly, we examine here the following questions:

- What constitutes learning *systems* in contemporary conditions?
- What does the emergence of these new arrangements and connections imply for change, for governance and for equity?
- How is globalization impacting these shifts?

From ‘education system’ to ‘learning eco-system’

It is no longer appropriate or adequate to refer to ‘education systems’ as comprising government (and private providers) plus schools. Conventionally, the assumption is that policy is set by governments and descends in a vertical implementation line through local government (to varying degrees and with differing levels of devolution/delegation), together with implementation/support agencies through to school Principals and into the classroom. Ancillary organizations, for example education publishers, exam boards etc (usually operating for-profit), together with teacher training organisations fit in to the arrangements set by governments. Naturally this straight-line connection through to classroom practice has always been highly problematic. Efforts to ‘scale’ major government programs or initiatives have often foundered on the difficulty of effecting behaviour change amongst teachers; and this has been the most powerful determinant of the experience learners have.

But across the world, it is no longer appropriate to think in these terms. Amongst other factors, the penetration of digital technologies; the opportunities for other providers to by-pass schools altogether; the closer interest by employers and business in the outcomes of schooling; the interest and expertise in learning of a range of other institutions (e.g. in the creative sector) all entail that we should be thinking of *'learning eco-systems'* – interdependent combinations of different species of providers and organisations playing different roles with learners in differing relationships to them over time and in varying mixes.

There is as yet no set formula for what a learning eco-system looks like. It is unlikely that there ever will be – just as is the case with contexts from which this environmental metaphor is drawn. The first point to note however is that we are talking here of complex systems and not complicated machines (an underlying image which has perhaps bedeviled efforts in the past).

The difference between complication and complexity revolves around three criteria: the extent to which the model or system can be *designed, predicted and controlled*. Whilst a jet engine is immensely complicated, with many moving parts, it scores highly on the degree to which it can be designed, predicted and controlled. At the other end of the spectrum, systems such as cities – whilst they are to varying degrees designed; and susceptible to prediction and control, are nevertheless categorically different. They are characterized by a high degree of interdependence of elements and connectivity. Interaction is critical. Complex systems are more autonomous, more difficult to predict, and often self-healing. Complexity and systems researchers now study phenomena as varied as SARS epidemics, Stock Exchanges, brain neurons and consciousness, and the weather.

The focus has been on seeking to understand the dynamic of systems: what are the key elements, which affect each other, and how?

Mass public education systems are surely more like complex systems than they are like complicated machines. It follows that the interactivity of their constituent parts creates new forms of flux. The speed of changes flowing from these cannot be known: for example, it may be that the availability of online tools and learning channels may require schools to morph and adapt far more rapidly than we currently imagine; or may bring about user disengagement from schools at an even faster pace.

Clearly the key elements or constituents of the learning eco-system are transformed from those which existed a decade ago. The most significant and the fastest growing are those which are available to all learners with access to the internet. However additionally we must consider the range of players and providers, whose impact is emergent and unpredictable (as one would expect in a complex system). These include

- vast corporations entering the education market in different ways (for example running low-cost private schools in Asia)
- capital and venture philanthropy operating globally and on a much greater scale.
- technology start-ups innovating learning analytics and the applications of Big Data to learning contexts
- cultural organizations diversifying to create learning offers
- businesses: whilst the apprenticeship model is one of the most ancient of learning environments, more businesses are now engaging with schools to create extended internships for school-age learners to diversify and root their learning in real-life contexts.

Ben Hecht, President and Chief Executive of *Living Cities* has written in the Harvard Business Review blog "diverse groups of local leaders – private, public, philanthropic and non-profit – fed up with the dysfunction around them, come together to challenge conventional wisdom and fix problems long written off as unsolvable such as poverty, unemployment, and a failing education system. More often that not, they lack the formal authority to solve the problem and don't have an obvious 'plug and play' solution".

These organizations are playing a variety of different roles, in different contexts.

The Solution Revolution[2] profiles six types constituents of the new eco-system who are involved in transforming education in the United States:

Investors	Investment in education has long been a focus of a wide variety of charitable investors, from individuals and religious organizations to corporations and foundations. Today, however, many other players are also investing to improve educational outcomes. The private sector is very active in this regard, as evidenced by growing private-sector investment in education technology companies.
Conveners	From large formal gatherings featuring prominent leaders and scholars—such as the Clinton Global Initiative Annual Summit—to small informal gatherings of community members who find each other on Meetup.com, people are coming together to brainstorm solutions—and the act of forming the connections helps to power change.
Multirational multinationals	A growing number of companies are acting on the belief that there is a link between social responsibility and shareholder returns. Some of these companies focus on providing educational products and services specifically, while others contribute to the cause because they see a more indirect link between their company's goals and the goal of a better-educated population.
Steady suppliers	Societal problem solvers do not have to come from outside the old "system." In fact, large-scale progress in education could not be made if the traditional players—teachers, administrators, and government—were not active in the movement to revolutionize education.

Citizen changemakers	With increased connectivity, one person with a great idea can see that idea become reality, quickly growing to impact students' lives—as evidenced by the activities of Teach For America and the Khan Academy. Technology also makes it easier for citizens to reach the critical mass needed to make a substantive difference. For instance, individual donors are contributing directly to teacher and student projects through crowdfunding platforms.
Innovators	Innovative social enterprises are using new technology and new business models to help spur improvements in curricula, delivery, and measurement.

Of course not all denizens of the new eco-system are united in the direction of the change they wish to see. Some Foundations and philanthropists may have agendas that are not congruent with the aims and values of 21st century learning, reflecting more the interests of their funders. Moreover, some 'new players' are reinforcing 20th rather than 21st century learning, or promoting 20th century learning on steroids, or promoting 'back to basics'. This is evident in some of the 'free school' initiatives launched in the UK, and in some charter schools in the US. There is an inevitable contest of ideas. This raises important and interesting issues regarding the place of democracy in this process.

Each of these factors force systems to reconsider how leadership and influence are exerted. This is particularly true in jurisdictions where the line between educational interest and political interest may be blurred. Furthermore, cultural context must also be taken into account. There are still a number of jurisdictions where new players, networks and alliances may have less impact - particularly where systems are considered to be high performing and therefore the demand for external intervention is markedly diminished. However, aided by technology, and a rise in international comparative testing and data analysis, jurisdictions continue to be exposed to an international drive to improve performance, and in many cases a need or a desire to allow completely new models to be developed and implemented.

Governmental responses

Elsewhere[3], it has been suggested that modern governments need to act as a 'platform' in order to optimize these new conditions. That means moving away from the notion that the 'system' is a machine that is bounded (though monopolistic provision) that can be directed and predicted. But what are the positive moves governments can make to exploit fully the power of emergent ecosystems to create equitable learning societies? It is often remarked that a major concern arising in relation to this new landscape is how it will impact upon equity. It is right that this concern should be raised; and in the suggestions below, it is perhaps this critical criterion (in addition to improving quality and excellence) to which governments must attend since some – but absolutely by no means all – of the new constituents of the system will have profit as an important concern. However, it should be pointed out that, (with a few Scandinavian/Nordic exceptions) the record card of old education systems on equity is hardly a success story.

What then might government attitudes and responses be? It is suggested that there are fundamentally 3. Appropriateness will differ across contexts.

1. REGULATE: - identify and mitigate risks; establish quality assurance protocols; manage data, privacy and procurement

2. INCENTIVISE: - establish third part brokers and enables; dedicate resources to establishing partnerships

3. ACCELERATE: - create internal and external enabling environments; measure impact and promote

Within the 'universe' of ILE jurisdictions, and across the jurisdictions in the sister initiative, the Global Education Leaders program (GELP), examples of each of the above are to be found. One jurisdiction has described the re-orientation of their government to this challenge as having decided to 'walk together' – not alone, nor in parallel. Older examples include that of Finland which in its 'Kuopio Cultural Paths' program has incentivized all the cultural and creative institutions of the city to form part of the fabric of educational opportunities for students. In Louisiana, the State has seized the initiative with its Course Choice program by forming a broad based coalition of providers (five public school districts, every public college and university in the State, Louisiana-based course providers and virtual schools) so that high school students can have an unprecedented breadth of pathways to higher education or career pathways. So we are seeing new opportunities for students to learn in a range of settings: online, in workplaces, in cultural organizations, informally as well as in the classroom – and importantly, for all of this to count.

In a GELP working group convened to consider the implications of the emergent new eco-system, system leaders from a diverse range of jurisdictions suggested the following ideas for governments to consider in these new contexts:

- · Existing 'systems' should seek to identify, integrate and capitalize on the impact of new players
- · Those 'systems' should understand that seeking partners is not an admission of failure
- · ecosystems that fully embrace new players as resources to improve the learning of students are preferable to competition
- · Reciprocity – existing 'systems' must recognize the value of new players and vice versa

These are wise reflections for governments. Perhaps the key will be to facilitate *relationships* between government, schools, and players who have expertise, ideas, and resources to offer to innovate education.

However in many areas of the world a diverse eco-system is springing up without the permission or active involvement of government. Learning is now too important to be left to languish if governments cannot succeed in satisfying their citizens' needs and wants. Clearly there are equity concerns: but these pertained in the previous conditions too.

Leading change in eco-systems

In such complex, diverse and challenging contexts, can the processes of change actually be led? We have been accustomed to thinking about system leadership as emanating from the political or governmental bases; or in some exceptional cases from leaders of influential institutions. Now, with the multiplicity of actors and agencies (and funding streams) set to characterize many if not most jurisdictions, sources of leadership may be more plentiful; but the task is more complex.

Comprehending something about the dynamics of complex systems is essential to effecting change, and particularly to promoting scale and diffusion of innovative effective approaches. Underexplored in this issue is the mobilisation and empowerment of the *demand* side. Too much attention has in the past has been paid to the supply side. No-one has legislated for, or mandated the use of Khan Academy materials - but the model has exploded across the globe, because users love it. Thus a number of new players in

ecosystems are paying particular attention to the demand side, and exercising leadership through that route. If more learners and their families understand what powerful personalized learning looks like, they are more likely to demand it and seek it out – and supply will follow. Hence foundations such as the Koshland Family Fund, and Inspirarae in Brazil place considerable emphasis on communication and social mobilisation: seeking to galvanise the public will behind new, better, more equitable and more effective forms of education.

One further significant shift in the locus of system leadership for the future derives from the globalisation of education. This process has been accelerated both by comparators like PISA, but also by the technologies which of course know no borders and indeed by economic globalization itself. Many global companies are now deeply involved in education. What are some of the implications?

Some are clear:

- System leadership can now be exercised through use of technology globally to showcase and enable transformed environments to influence others. A good example of this is the *'Deeper Learning'* MOOC offered in 2013 by the High Tec High group in California – one of the most innovative and successful school groups in the world. The MOOC was accessed by tens of thousands of people worldwide.

- As a corollary, the role of national/jurisdictional governments needs to be re-thought. What, in the future, will be their distinctive and irreplaceable role?

- Globalization is likely to further amplify the effect of the actions of the new players in the eco-system:- tech startups, multinational businesses, big capital philanthropy etc

- Globalization should not necessarily be conceived of as an innovative forward-looking force. Less visionary jurisdictions may be driven into myopic, indeed retro-active reactions to readily available international comparisons such as PISA results which may not serve well the demands of their learners and their economies.

The fluidity, diversity and dynamism of learning eco-systems are now manifest. The promise for accelerated innovation is great. Equally the challenges – for equity, for democratic process and for leadership – are considerable. Meeting them will require different mindsets – but the potential prize is great.

1 Joined-Up Innovation Mulgan G (NESTA 2013)

2 The Solution Revolution: how business, government and social enterprises are teaming up Eggars, W., and Macmillan, P. (Deloitte 2013)

3 Developing an Education Ecosystem for Education Hannon, V., et al (CISCO 2011)