

FUTURE OF WORK AND EDUCATION FOR THE DIGITAL AGE

A Social Ecosystem Model: A New Paradigm for Skills Development?

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Abstract

The challenge is to create sustainable, inclusive, educational, social and economic growth based on city regions. This proposal is for a corrective to dynamic but exclusionary 'elite' entrepreneurial/technological ecosystems (globalized centres such as Silicon Valley and London City). The proposal is the creation of an inclusive Social Ecosystem Model (SEM) that links 'working, living and learning' as the new and expanded parameters of skills formation in a digital age. We suggest that a key vehicle for social ecosystem development are area-based collaborative networks (comprising educationalists; employers; local government, civil society) and local anchor institutions that utilize open digital technologies to facilitate skills development and civic participation.

Key words – human ecosystems, skills formation, cities, collaborative networks

Challenge - conceptual, systemic and political

Dynamic models of economic growth and wealth production - clusters of digital technologies epitomized by Silicon Valley's giant global companies such as Apple, Google, and Amazon - can be characterised as an elite entrepreneurial ecosystem model (Hodgson and Spours, 2018). The Hamburg G20 Final Communiqué aimed to 'bridge digital divides along multiple dimensions, including income, age, geography and gender', and to 'ensure that all our citizens are digitally connected by 2025'. However, the focus on private wealth production; the exploitation of prime geographical sites and acting as talent magnets for graduates from elite universities has worked in an increasingly exclusionary way - a detached relationship with education; the generation of economic inequalities and urban social displacement. Elite ecosystems link the worlds of work, living and learning, but in a regressive manner, do not bridge the social divide, and consequently are potentially unstable.

The Sustainable Development Goals Agenda mentions innovation and technology (Goal 9), but this is not articulated with justice and equality (Goal 10). The challenge is thus to produce a different type of ecosystem model - that links working, living and skill development in an inclusive, sustainable and social way. However, in marketised economies current orthodox skills supply models and recent skills/employment ecosystem models appear unable to confront the scale of the task. The skills supply model breaks down under the lack of employer demand regionally for high skills, relying instead the 'poaching' of existing skilled workers (Finegold, 1999) and on the recruitment of migrant labour. 'Skills ecosystems' focusing on employer demand for skill, on the other hand, are experiencing barriers including issues of ecosystem



complexity and the power of existing neo-liberal ‘skills settlements’ in the private sector that have thwarted innovation in workplaces (Buchanan et al., 2017).

What is now needed is a conceptual step-change towards a more comprehensive ecosystem model that emphasises education/employer co-production of skills for an inclusive and more equal community that also links working and living. In making this step-change the first challenge for the G20 is ‘conceptual’ – seeing not only beyond the elite entrepreneurial narrative, but also advocating the role of mission-led innovation (Hodgson and Spours, 2018; Mazzucato, 2016). The second is ‘systemic’ – a global narrative that identifies the different factors/forces that the social ecosystem model is seeking to synergise and to transform skill development, workplaces and living spaces in city regions. The third is ‘techno-political’ – understanding that social ecosystems will be essentially forged at the local level, but that such devolution requires supportive actions from a ‘facilitating state’ and the integrative role of digital technologies. The fourth and final challenge for the G20 is that of ‘time’ – social ecosystems cannot erupt overnight, but require long-term processes of construction. These conceptual steps are represented in Figure 1 that compares and contrasts features of elite and social ecosystem models along eight dimensions.

Figure 1. Elite and social ecosystem models contrasted (about here)

Dimensions	Elite ecosystems	Social ecosystems
1. Mission and function	Private wealth production	Public good
2. The horizontal terrain	Place-using	Place-shaping
3. Catalytic/assistive factors	Retrospective understanding	Prospective theorizing
4. Role of state & key institutions	Privatised civil society networks	Public/private networks & local anchor institutions
5. Education & training	University focused	Partnerships of HE/FE & social partners
6. Workforce and community participation	Employee participation in flatter companies	Community, work & democratic participation
7. Digital connectivity	Dominant role of digital/finance nexus	Assistive role for socially digital technologies
8. Time and evolution	Time bound cycles	Long-term ‘construction’ project

Source: Hodgson and Spours, 2018



Proposal – building local social ecosystems to connect working, living and learning

The German G20 presidency set the themes for 2017 as Resilience, Sustainability and Responsibility'. We propose that this may be achieved in the area of skills and education through the social ecosystem model.

'A social ecosystem can be defined as an evolving place-based, comprehensive social formation focused on the connected worlds of working, living and learning. Social ecosystems are supported by an enabling national state, devolved local state and socially designed digital technologies. They suggest a leading role for horizontal networks and local anchor institutions involving a variety of social partners in the public realm and private sector

(Hodgson and Spours, 2018)

Building on the elite/social ecosystem distinction, the SEM model has involved three theoretical adaptations:

- extending the four elements of the Finegold (1999) high skills ecosystem model (Catalysts, Interdependence, Nourishment and Supportive Environment) to include a wider range of economic actors and government actions;
- introducing a spatial interpretation of the scalars (micro, meso, exo and macro) of the human ecological model of Bronfenbrenner (1979, 1994). This spatial approach focuses on the importance of local and sub-regional terrains and the concept of different types of human ecosystems being 'nested' within a wider social system;
- infusing a new political economy dimension - the horizontal and connective roles of common values and purposes, collaborative activities and networks and mediating forms of leadership that function within vertically-organised nation states (Mazzucato, 2016; Hodgson and Spours, 2018).

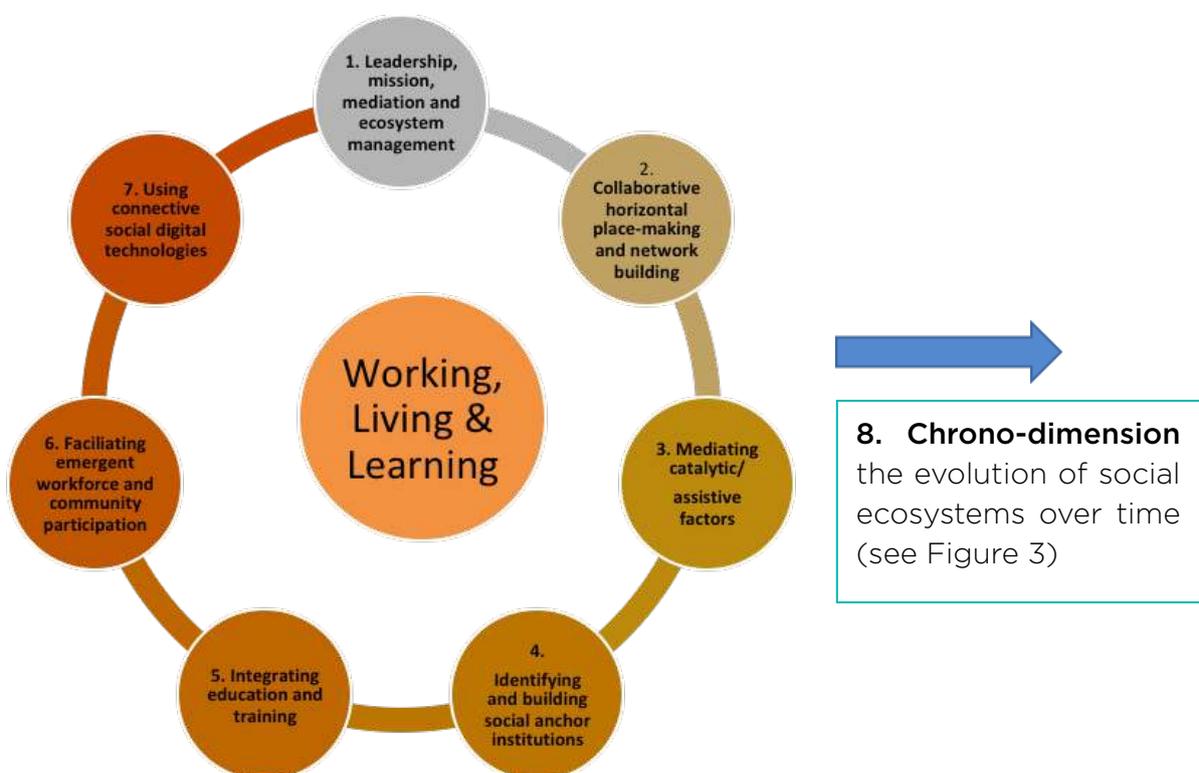
We propose that the G20 considers this wider range of economic actors, and articulation between the national and sub regional systems when supporting economic and skills development.

The first stage in the expanded ecosystem model is identifying a shared public mission, or narrative, and determining ecosystem leadership to help cohere the different social forces and their specialist functions within a defined geopolitical space. A common



theme in relation to all the social ecosystem dimensions is the process of ‘mediation’, in which key social actors think and move along horizontal and vertical terrains to arrange exchange and collaborations, to mediate the effects of national and regional government and to use global digital systems to support horizontal collaborative working. Crucially, the act of vertical mediation involves stimulating participation from below, involving a variety of civil society organisations that may ultimately provide the decisive identity of the social ecosystem. Eight dimensions of the social ecosystem model are summarised in Figure 2, in which seven could be seen to be evolving through many related phases along the eighth chrono-dimension.

Figure 2. Dimensions of the social ecosystem model (about here)



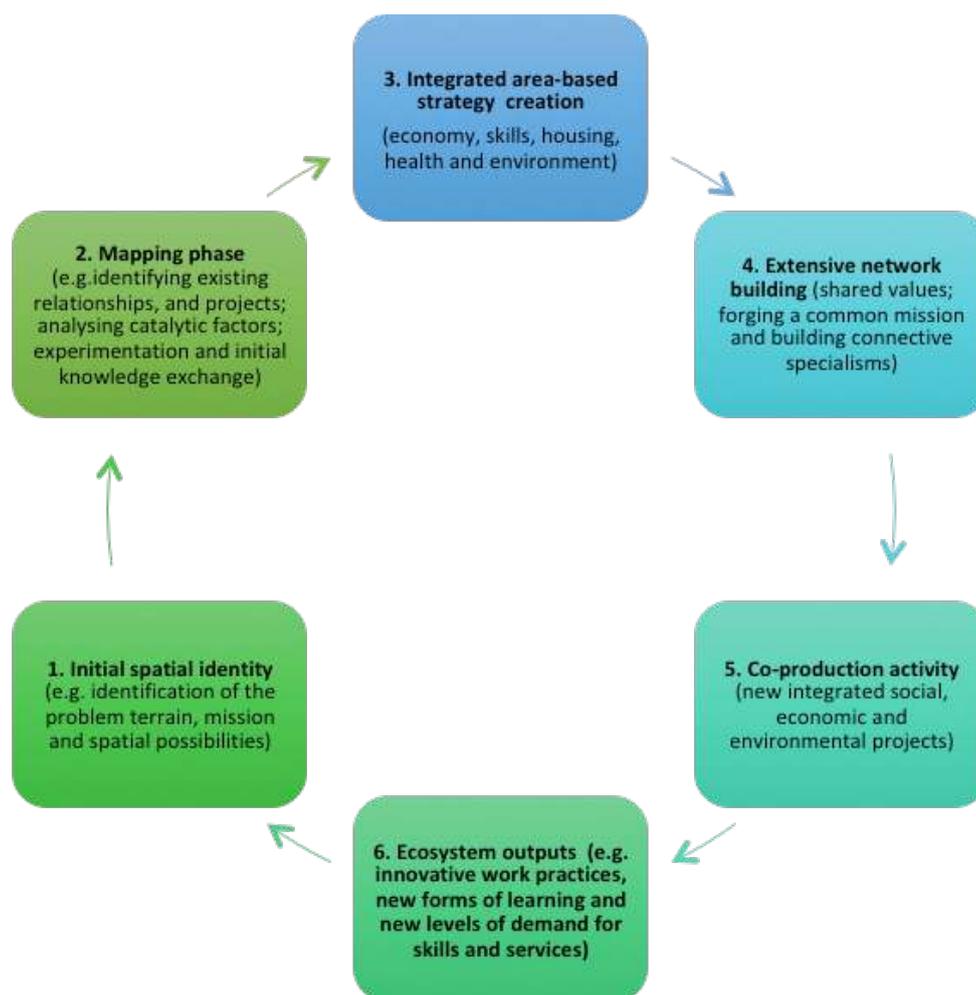
Source: Hodgson and Spours, 2018

The dynamics of the chrono-dimension are highlighted in Figure 3. The ecosystem synergy cycle suggests that the initial phases (1 and 2) are concerned with problem identification and mapping of existing relations, including the potential confluence of factors, project-based approaches and possible experimentation, to determine social ecosystem potential and boundaries. The middle stages (3 and 4) constitute strategic, connective and networked sets of activities as the social partners are brought together on a more systematic basis to plan how to work together and how to synchronize their existing activity for mutual benefit. The later stages of the cycle (5 and 6) could see new forms of collaborative activity and outputs that identify and



create the demand for new types of skills; reinforce the sense of ecosystem evolution; and lead to the identification of new problems and missions to be addressed. The G20 should establish a common framework for research to understand dynamics of SEM systems across all economic regions.

Figure 3. The social ecosystem synergy cycle (about here)



Source: Hodgson and Spours, 2018

The broader, participatory and evolutionary formation of social and political forces in the social ecosystem model decisively breaks with elite ecosystems not only in terms of the range of forces assembled and level of social inclusion, but also in terms of the underlying thinking. Theorising in the elite ecosystem model (e.g. Isenberg, 2011; Mason and Brown, 2013) is a retrospective activity, rationalising what has already taken place whereas the social ecosystem model is envisioned prospectively as a long-term project of inclusive construction. Moreover, the new model can also address some of the barriers facing the Skills Ecosystem approach by increasing the range of social forces involved beyond the private sector and by having a long-term



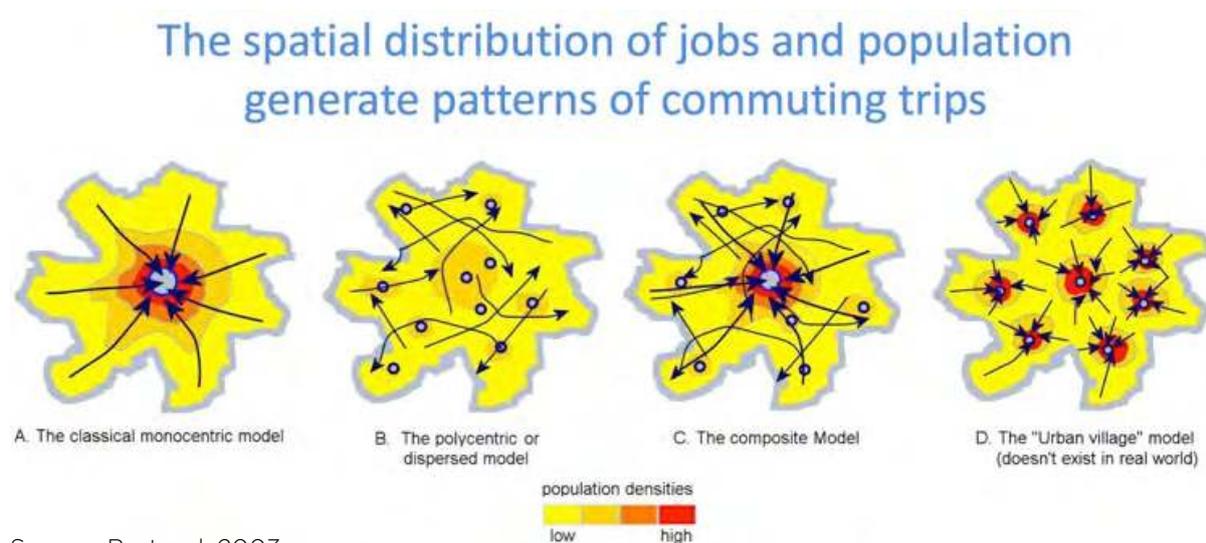
dimension - a staged cycle where all components of the social ecosystem do not have to be assembled simultaneously.

Applying the social ecosystem model to working, living and learning in cities

Supernova and Polycentric: London's experience as a global city

Global cities and city regions provide a crucial context for the exploration and development of the social ecosystem model. We argue that cities such as London, Guangzhou, Shanghai, Tokyo, New York can be understood as 'supernova cities' with a mono-centre and convergent travel to work patterns (see Pattern A in Figure 4 below).

Figure 4. Supernova cities and journeys to work patterns (about here).



Source: Bertaud, 2003.

In the case of London, the supernova/mono-centric effect is the elite ecosystem model at work - a dynamic, digitalised City-based Financial and Technology sector that spreads out with rippling effects on house prices causing social polarization and displacement. The resulting inequalities undermine public services and amenities in general because it is difficult for many to work and live in the capital city, the young, and those providing basic, and social services, having no option other than to leave for a less expensive environment. The high price of housing drives out recreational and social spaces as they are developed for accommodation. The centre, and therefore the elite eco-system itself is potentially unsustainable.

However, reflecting the elite/social ecosystems distinction, the monocentric supernova centre can be contrasted with emergent polycentric urban developments (Roth et al, 2011). While supernova realities currently dominate, a more polycentric vision of,



for example, London is emerging with plans for Cities in the East and West (Mayor of London, 2015; NLA, 2017), illustrated in a combination of Patterns C and D in Figure 4. These new combinational polycentric developments, that are also embedded in regional and sub-regional strategies, point to a future ‘rebalanced’ city that comprises not only a dynamic centre, but also a range of vibrant urban hubs/communities in the outer boroughs which integrate working, living and learning. Here we suggest that the social ecosystem model might have a symbiotic role in relation to polycentric developments insofar as the social ecosystem conception helps to envisage each of the ‘polycentres’ as a complex functioning social unit.

The inclusive and connective role of education in a polycentric urban environment

Inclusive local anchor institutions

Education, anchor institutions and new networks will play a crucial role in defining the parameters and functions of a social ecosystem. In elite ecosystems education plays a detached role insofar as tech and finance companies seek to recruit graduates from globally prestigious universities. In social ecosystems, education has a much more expansive, connective and multi-dimensional role, bridging the divide to support all sections of local populations to learn and progress, to achieve and progress to rewarding work and to experience sustainable living.

Within education’s expansive function is a unique potential role for inclusive institutions such as TVET colleges that promote vocational learning and skills. As place-based anchor organisations, they can meet the needs of a wide range of learners and social partners by providing bridges and interactions between educational and work-based settings and facilitating ladders of progression through partnership working and shared personnel with employers of all sizes. However, the concept of social ecosystems as future-oriented, multi-level and activity-based social formations poses a challenge for providers of TVET, employer organisations and local and regional government in marketised systems that will now have to think less competitively and more collaboratively. G20 could provide leadership in this respect.

New forms of partnerships focused on polycentric urban developments

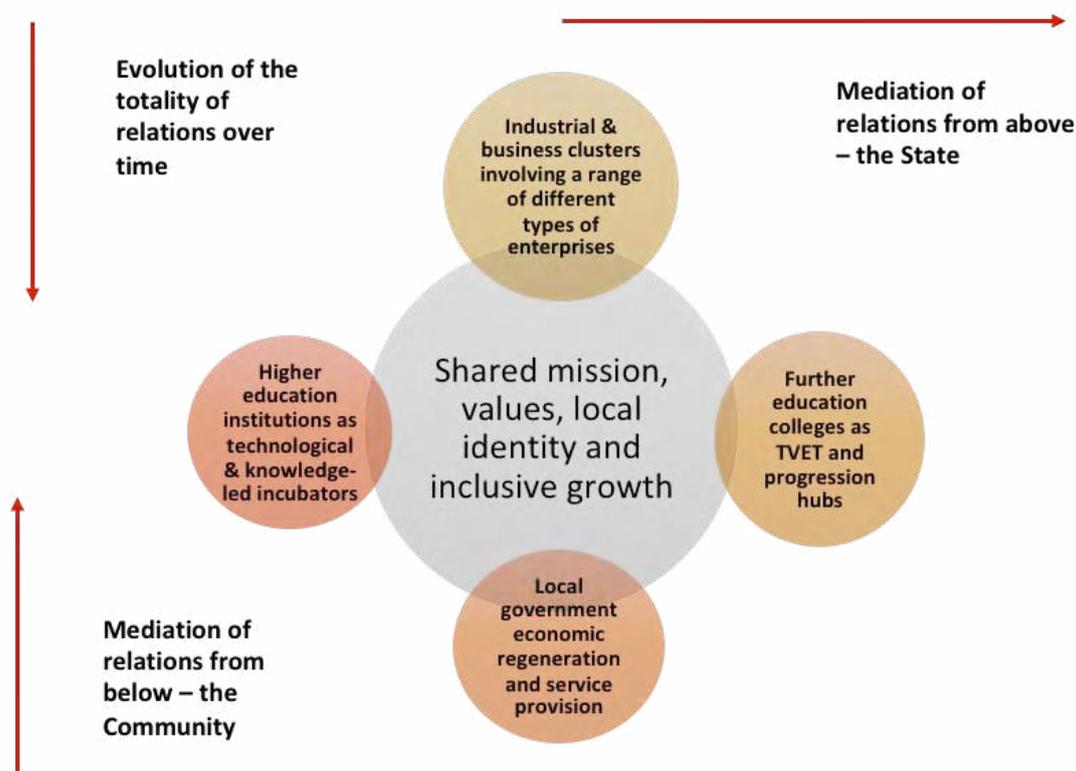
There is an important role for new types of partnership working – focused on polycentric urban developments that embrace the new local economy and high-skilled work; housing development, transport connectivity and sustainable living; integrated health and social care services; and connective digital developments. Arguably, these types of collaborations only achieve maturity and become a social ecosystem as such when they involve different forms of life-long learning at their heart because with this comes the prospect of inclusive and sustainable growth



based on empowered local populations. This moves the emphasis from an ‘achieved’ qualification towards a continuous process of maintaining competence. For local and regional government, the challenge is to collaborate with urban social partners to bring education and training into the foreground of new polycentric urban and social developments and for the new networks to represent a confluence of distinct specialist inputs or what in ecosystem terms is seen as the ‘synergies of difference’.

In global cities we now see embryonic social ecosystem networks that could be characterized as emergent ‘High Progression and Skills Networks’ (see Figure 5).

Figure 5. High Progression and Skills Networks around here



Source: Hodgson and Spours, 2018

Towards a new skills paradigm – the challenges for G20

Social ecosystem thinking and the social ecosystem model is an integrated conceptual framework that attempts to see beyond the worn-out binaries of market and top-down state; urban centre and periphery; skills supply and skills demand. At its core lies a more connective, devolved and sustainable view of the world that sees rich potential in the synergy of diverse social forces and their respective specialisms to produce a new economic, social and educational dynamic. In this sense, social



ecosystems are a form of civil society building and a form of transitioning away from current neoliberal realities (Hodgson and Spours, 2016).

A prime challenge is that of 'leadership' of social ecosystems, because SEMs do not emerge naturally. The collaborative nature of this human ecosystem model suggests that leadership should be collective; that different social partners are able to subscribe to a general narrative that may be derived from local identity and social obligation. This networked form of leadership will depend on the role of 'connective intellectuals' (Spours, 2016) that are rooted in the range of social forces represented and are able to provide a strategic overview of necessary paths of development. Here there will be a role for a new type of longer-term, collaborative and integrative research and development strategies between universities, TVET and a range of key partners in the local and sub-regional ecosystem to map out future sustainable ways of working, living and learning in rapidly changing global city regions.

The social ecosystem model, and its aim to bring into collaboration a range of competing and dislocated forces, is a form of 'social and political alliance-building'. While the elite/social ecosystem and private/public distinction is emphasised in Figure 1, the economic reality is more complex. Platform capitalist companies (Srniczek, 2016) such as Apple, Google and Facebook, would subscribe to many of the principles of the social ecosystem model. The development of social ecosystems will depend on public/private collaborations. This brings us to a crucial challenge not only of local social ecosystem leadership, but the role of the political realm, internationally in the G20 and in respective local and national states, to assist in facilitating new synergies in the areas of skills and the economy. Politically this could include an acceleration of the devolution of powers to the local level; inclusive qualifications/curriculum reform that embrace all social partners; an enhanced regulatory framework for employers, such as the extension of 'licence to practice' and incentives for institutional collaboration between education providers.

The emerging role of digital technologies constitutes a practical and conceptual challenge. Social ecosystems are envisioned as highly place-based whereas these digital communication technologies are 'supra-place'. The notion of spatial digital connectivity has been captured in the concept of 'City as Platform' in which the nodal networked city sees citizens as co-designers, co-producers and co-learners. Cities can now utilise four connective assets - people, data, infrastructure and technology (Bollier, 2016).

A fourth challenge is the nature of the curriculum and what can be learned in social ecosystems. In the context of a highly performative 'Anglo-Saxon' education model (e.g. US, UK, Australia and now some Eastern European and African education systems) (Sahlberg, 2007), the social ecosystem model suggests a challenge to



develop more holistic and connective concepts of education that brings general and vocational forms of learning into dialogue rather than separating them into different tracks (Hodgson and Spours, 2014).

A new paradigm for skills? The proposal summarized

The proposal suggests that:

- 1.** The dominant entrepreneurial ecosystem model is recognized as both economically dynamic and socially exclusionary and potentially unsustainable. We recommend that G20 policy makers work towards establishing devolved Social Ecosystem Models (SEM) that seek to promote inclusive economic, social and educational growth.
- 2.** The function of the SEM is to bring about and connect transformations in work, in sustainable living and in skills formation and will provide the concepts and civil infrastructure for the 'reshaping' and 'rebalancing' of cities and city regions. The SEM will be multi-dimensional, forged through ecosystem leadership and alliance-building drawing on a range of social forces with different functions from the public, private and third sectors. G20 policy makers should seek to bring these players together in a common local mission.
- 3.** The G20 should encourage global-narrative educational leaders to move their emphasis from skills supply (based on qualifications) to a greater emphasis on skills co-production between different social partners, and inclusive of the entire local community (based on the growth and maintenance of competencies).
- 4.** Key actors in SEM formation will be inclusive local anchor institutions and socially and economically inclusive high skill networks. There are many political, economic and technological/digital challenges in building the SEM. We recommend that G20 policy makers establish a long-term project of social and educational construction.



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