
Developing productive places: The role of universities in skills ecosystems



University Alliance Regional Leadership series

About University Alliance

We are universities with a common mission to make the difference to our cities and regions. We use our experience of providing high quality teaching and research with real world impact to shape higher education and research policy for the benefit of our students and business and civic partners. We innovate together, learn from each other and support every member to transform lives and deliver growth.

Front cover image: For those at the start of their business journey, Manchester Metropolitan University's start-up incubation unit Innospace gives support to entrepreneurs with low-cost facilities and on-demand mentoring to help get their companies off the ground.
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Foreword



Skills matter. They are at the heart of productivity and growth. Indeed, strong, sustained improvements in growth depend fundamentally on having the right quantity of the right kinds of skills. Skills help people to improve their job satisfaction and their income, and to lead more fulfilled lives. They underpin the success of businesses as well as public and voluntary sector organisations.

But skills are under pressure. Public spending on further and higher education has reduced significantly and, at all levels, people must pay more towards gaining new skills. Some routes for training and development – such as part-time study – have gone into decline; and there are doubts over the quality and effectiveness of others, such as apprenticeships. There are significant political, financial and structural challenges ahead.

There are also new potential ways to meet those challenges. Government policy is to devolve power and responsibility, in diverse ways, to cities and regions. This process builds on and accelerates previous programmes of devolution under the coalition, although the new policy goes much further. The ‘Northern Powerhouse’ is leading the way, with a pioneering programme handing control of economic development, planning, transport, and in some cases health, to new combined authorities in places like Manchester and Sheffield.

The skills challenge has to be seen in the context of this new wave of devolution. In many parts of England, skills policy is already guided by Local Enterprise Partnerships, and we can expect this to be extended. Both the demand for, and

supply of, skills are regionally sensitive. Growing both will need regional solutions. We argue here that the best way to achieve this is for city-regions to consciously develop thriving skills ecosystems – with employers, entrepreneurs, universities, colleges and schools all playing their part. Universities should take the lead in making this happen. We are stable ‘anchor institutions’ concerned equally with supporting people to gain knowledge and skills and helping organisations to innovate and grow. Perhaps most importantly, we are ready to step up to meet this challenge.

This paper is the last in a series that University Alliance has produced this year, looking at different components of regional prosperity: health, opportunity for all, research, and innovation. We envisaged these as being short, evidence-based ‘think pieces’ to stimulate debate and show how universities – within wider ecosystems - add real value to their cities and regions. There is no more important way to build on that than through generating the right skills for the future.

Professor Steve West

Vice-Chancellor, University of the West of England
Chair, University Alliance

Executive summary

Skills development has many functions – economic, social and cultural. Skills are central to success in the complex, rapidly changing economy of the 21st century, and they are also an important way for people to achieve fulfilment, to be happier and more confident. Skills matter, and matter a great deal. It is also important that we have the most effective possible systems and structures in place to help people acquire the best skills to meet their needs, and overall to make sure we all benefit from a strong skills base to support our shared needs and goals. The development of skills is a key tenet of public policy, and the shape of the skills landscape is a very important dimension of that.

The skills landscape has been changing very rapidly in recent times. The Government has identified improving productivity as a priority, and reforms in skills policy are a key part of that. There is a new target to increase the number of apprenticeships, qualifications have been reviewed and streamlined (and will continue to be), new kinds of institutions are emerging (such as University Technical Colleges, National Colleges and Institutes of Technology), and key skill areas such as those in Science, Technology, Engineering and Maths have been given additional resources.

In addition to this, skills systems are becoming increasingly devolved so they look very different in different UK nations, and have diverged considerably within England – as Local Enterprise Partnerships have taken on responsibility for co-ordinating skills policy in their own areas, including resource allocation. This will become an even more important process as new ‘combined authorities’ in key city-regions come into being, having reached agreement with central government about the nature of extended devolution they want to take on. Because skills policy is one of the common issues open to greater devolution, this may change the skills landscape considerably.

That will happen at a time when skills policy at the national level faces major challenges: severe limitation of resources, controversy about how best to use them, ever more complex structures, reconfiguration in key institutions of government, and so on. The case for universities to be a central player in meeting those challenges and building an effective skills landscape isn’t simply obvious – it is a case that has to be made actively.

Universities are well placed to support the creation of more effective skills ecosystems at the regional level. They can do this, first and foremost, by continuing to provide a pipeline of talent to businesses and organisations in the private, public and voluntary sectors through educational programmes increasingly focused on high level skills. But crucially, an ecosystem is not just a supply system. This means that universities also have a key role in working with businesses and organisations to shape the demand for skills, innovating, rethinking the design of business processes and jobs themselves. This mutual approach has the potential to ensure best utilisation of the skills we generate, and best value for the resources invested in that effort.

Because the approach is rooted in partnership, it cannot be imposed or effectively implemented by central government. Central government can provide a framework, and key foundations such as national finance and qualifications systems, but devolution is fundamental to making a success of it. We make several recommendations as to how to get the most from the opportunity of increasing devolution, recognising that there is a relationship between the scale at which the devolved structures operate and the time it takes to develop them and a policy landscape around them.

At the local level, and in the short term, there should be much stronger relationships between universities and Local Enterprise Partnerships. All LEPs should carry out skills mapping exercises

in their areas in line with national guidance, to understand the complexities of skills supply and demand in the context of other factors. In addition, LEPs should strengthen inter-LEP connections and increase university involvement in their governance arrangements.

At the regional level, and in the medium term, combined authorities will develop and begin to take on substantial responsibilities, and this is an opportunity to build-in an ecosystem approach to skills from the start. In this report, we seek to illustrate through our 'deep dive' in the Greater Manchester city-region how universities are already contributing to a thriving skills landscape and providing a foundation to build upon. As the process of devolution continues, close alignment between combined authorities and LEPs will be crucial; in time, these integrated structures will be important as a foundation for any collaborative activities in the region – for example in creating or accessing new forms of finance for skills. There are numerous possibilities here, and no single approach will be suitable for all regions – but it will be very important for regions to be in a position to grasp the opportunities swiftly, and that has to be thought through now.

At the super-regional level, and in the longer term, attention should turn to how different city-regions within wider key agglomerations (e.g. the 'Northern Powerhouse') should both specialise and integrate. The relationship to major infrastructure projects such as high-speed rail links, as well as investment in housing and cultural facilities, all become crucial. The aim must be for high-skill talent accumulation across broad economic regions in all parts of the UK – to help realise the vision of a more balanced national economy.

From skills landscape to skills ecosystems

Skills are the basic fuel of any economy. They enable firms to produce the goods and services people want to buy. Skills enable organisations in the public and voluntary sectors to be effective and give good value for taxpayers. A substantial body of evidence shows that more highly skilled individuals are significantly more likely to be employed and, when in work, more likely to earn more and to find their job rewarding.¹ For employers, workforce skills are critical because they determine rates of both incremental and radical innovation and improved productivity.² Indeed, at the macro-level skills are central to realising the ambition of the government's productivity plan for the UK as a whole, and this is, in turn, central to securing sustained economic growth.³ So we need to create the conditions where skills formation is abundant and where the skills being formed are both sophisticated and relevant, enabling businesses and organisations to succeed and develop more effective business practices. This is an imperative for local, regional and national prosperity.

Skills formation is not only an economic imperative; it is also a rapidly changing social institution. Being skilled has been associated with respect and prestige through the ages, but the skills we place high value on today are not universally the same as those we placed such value on in previous periods. In Britain, the state established institutional frameworks to support and regulate skills formation centuries before it did the same to improve working conditions or public health – today the state maintains (and frequently reforms) a complex array of such structures. Young people growing up in the 21st century have an immensely wider choice of possible careers than those who reached adulthood in the 20th century. People who have already embarked on careers are far more likely to change them, or blend them, than those from even one or two generations before them.

At its heart, the quest for skills can also be deeply personal: when people develop new skills, it improves their confidence and their happiness. Those effects haven't really changed over time – but they may be more important now in a contemporary society marked by growing inequality, anxiety, and risk.

In short, skills matter. More pertinently, the ways and means in which we seek to support and improve skills formation matter a great deal. They have to be effective, and the challenge today is to make them *more* effective with ever-diminishing resources. As the skills and economic performance research centre SKOPE recently asked: "what does skills policy look like now the money has run out?"⁴ We want to explore the contribution and commitment universities should make to answer this challenge, as policy on skills is often seen as a matter for business and the further education sector. Our working assumption is that supporting effective skills systems must be a key part of the role of 'modern civic' universities.

The current skills policy landscape includes many structures and initiatives. In some cases these have been developing and accelerating since the middle of the last decade (under Labour), and in other cases have been established since 2010 (under the Coalition Government). Successive governments have placed particular emphasis on creating a more autonomous and diverse education system by introducing new types of schools and further education institutions, on increasing the rigour of both academic and vocational qualifications, and on creating new progression pathways.

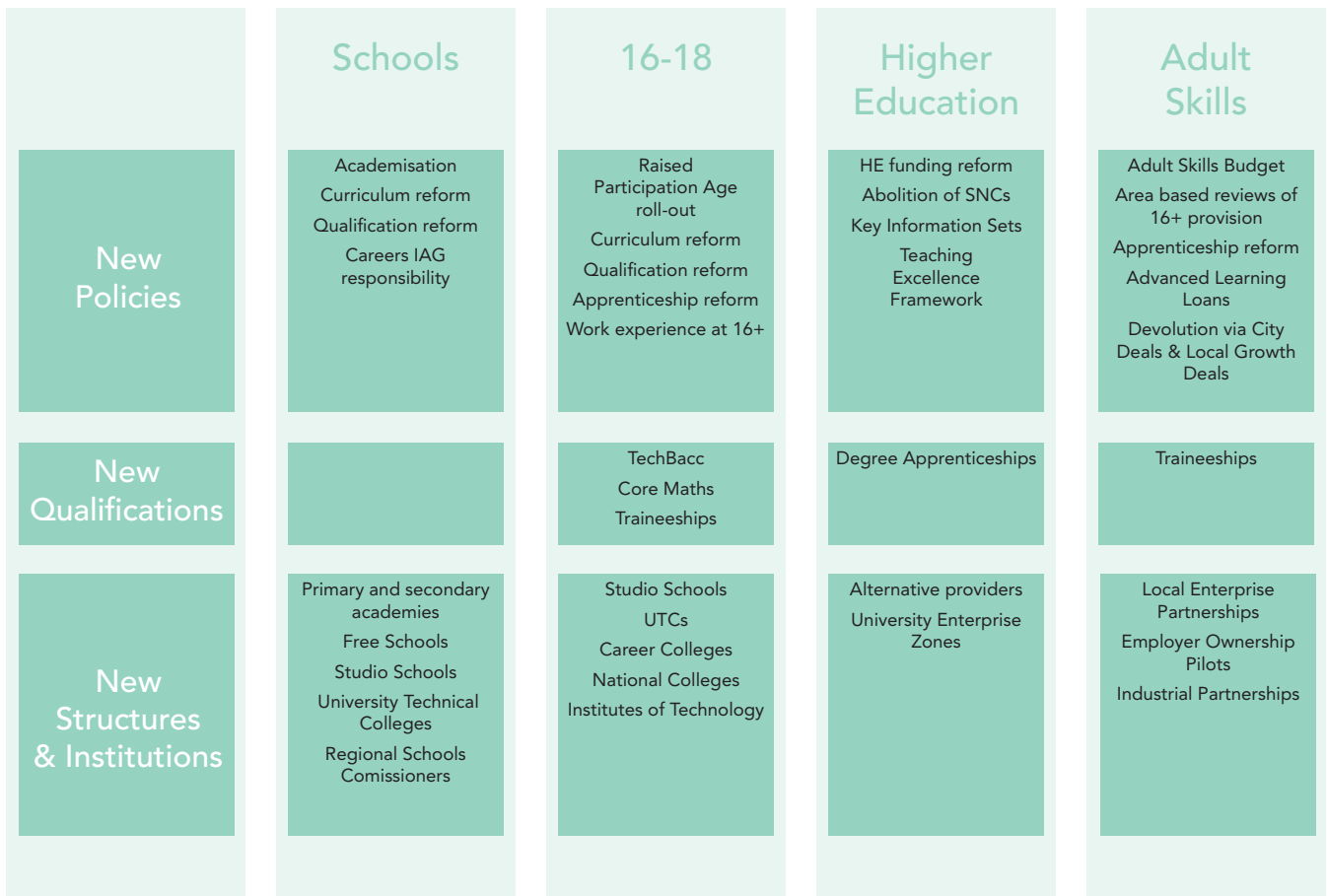
¹ OECD (2013) "Skills Outlook 2013: First Results from the Survey of Adult Skills".

² Toner, P. (2011) "Workforce Skills and Innovation: An Overview of Major Themes in the Literature". OECD.

³ HM Treasury (2015) Fixing the foundations: Creating a more prosperous nation.

⁴ Keep, E. (2014) "What does skills policy look like now the money has run out?" London: AOC.

Figure 1: The evolving skills landscape in England



The government’s forward view, set out primarily in its productivity plan, focuses on measures such as action on ‘coasting schools’, increasing both the quantity and quality of apprenticeships at all levels (supported by a compulsory apprenticeship levy), FE sector qualifications reform, and various HE sector reforms designed to strengthen competition and incentives for teaching excellence (primarily abolition of the student number control measure, and the introduction of a teaching excellence framework). Importantly, government appears to see universities as integral to addressing the productivity challenge, to the extent that they warrant their own dedicated part of the productivity plan. It is instructive that the section on higher education in the productivity plan is not concerned with addressing the quality of skills development in higher education, only with ensuring that supply of courses is not unduly constrained and that higher education is accessible to all. The most recent developments in policy include:

- A strong focus on **apprenticeships**, supported by a new levy on the payroll of large employers, to include significant expansion of apprenticeship opportunities at higher levels. The objective is to increase volume of apprenticeship opportunities to reach three million apprenticeship starts by 2020. There is considerable effort and urgency behind the agenda, but also growing doubts about readiness of the systems needed to produce these big moves on numbers in a short period of time and thereby ensure value for the levy payments being made from April next year.
- Various other measures to **open up supply of opportunities**, including removal of student number controls in the higher education sector, and the creation of new kinds of skills-focused institutions at different levels – such as University Technical Colleges, National Colleges and Institutes of Technology. These developments are moving at different speeds, and it is not yet clear what their long-term impact may be.

- **A review of technical and professional education**, under the chairmanship of David Sainsbury, which recommends a new system design for vocational pathways (related strongly to apprenticeships in many cases) as well as opportunities to 'bridge' into wider areas of learning. This is a continuation of previous work to rationalise the qualifications system to focus on provision with stronger skills content and stronger labour market value.
- A new impetus on several **'key' skills areas**; at all levels a renewed interest in mathematics capability will be pursued, and in higher education there will be some action on skills and employability in STEM and computer science. This is to address concern over the sub-optimal employment outcomes associated with these disciplines. Universities are being urged to work more closely with employers in the design and delivery of courses.

The landscape continues to change, and, in its evolution, is becoming increasingly inter-related with a parallel policy agenda for different forms of local and regional devolution. The Coalition Government focussed on creating demand-led systems that are more responsive to the needs of local economies and local employers by devolving oversight of adult skills to Local Enterprise Partnerships. This will now further develop through the creation of new combined authorities in many parts of England, many of which (it seems likely) will be given substantial skills related powers and will need to be brought into alignment with the role of relevant LEPs in their locality. The last six years have seen the creation of 39 Local Enterprise Partnerships and the agreement of 28 City Deals, 39 Growth Deals and ten devolution deals⁵, and in some pioneer cases considerable powers and funding have been moved into devolved institutions.

It should be noted that there is also considerable policy divergence within the devolved settlement of the UK, with Scotland, Wales and Northern Ireland all possessing their own skills powers. In Scotland, for example, there is a much better established credit and qualifications framework, a much higher proportion of shorter-cycle HE programmes, and a single funding council for further and higher education that has a statutory skills committee. Recent moves to merge a large number of colleges and introduce community governors in the HE sector will change the picture again. In Wales, skills policy is more centralised within the Welsh Government, and its central tenets include the creation of a single 'skills gateway' supporting both individuals and employers, combined with qualifications reform and restructure and investment in apprenticeships.⁶

⁵ House of Commons (2016) Cities and Local Growth, Sixth Report of the Committee of Public Accounts.

⁶ Welsh Government (2014) Policy Statement on Skills.

Challenges to universities in the skills system

This landscape is notable for the mixture of very different systems under the leadership of different government bodies, operating at different levels. The difference in treatment of schools, further education and higher education (in terms of funding certainly, but also in terms of autonomy and accountability demands) is often cited as a problem. It also seems clear that different organisations have different levels of power and influence in government, and these can play out in policy decisions. The repositioning of higher education within the Department for Education may be an opportunity to create more streamlined and better integrated policies, but this is not straightforward and will certainly take time. Still more complexity arises when we consider the considerable training needs (and differential training policy) of major public service sectors such as health, education and social care – each working with government as a major stakeholder and each having its own landscape of national, regional and local actors.

There are clear financial challenges ahead. The outcomes of the Comprehensive Spending Review will place enormous stress on the loose institutional framework underpinning skills formation. The money was already ‘running out’ between 2009 and 2015, and it is now clear just how little will remain by 2020; resources will become even tighter, with the system as a whole soon becoming almost totally reliant on a combination of student loan finance and a new levy-based funding structure for apprenticeships to support opportunities, and very little scope for additional cash from government beyond those channels for the foreseeable future. This is an immense challenge in an already challenging policy space.

There are also political challenges. Some commentators have argued that higher education is over-supplied and one answer to this question would be to divert resources from universities

to fund more training at lower levels.⁷ These arguments are flawed – we do need more training for skills in more diverse forms but we increasingly need people who combine both advanced skills and critical reasoning – and this is what higher education generates. Graduates who bring both skills and critical reasoning have the capability to innovate and are an important source of dynamism within firms and organisations, enabling the development of better business practices and new ways of working that produces ‘deep’ productivity gains. Graduates are also highly adaptable – trained not only to succeed in their first job, but also in long-term careers that are likely to encompass many different types of work.

In the context of increased devolution of multiple forms, there is a challenge involved in achieving more active co-ordination at the regional level than has hitherto been the case. This does not imply an outright rejection of central institutions – governance of the qualifications system, where national parity is important, will not be devolved. In addition, mainstream policy for funding study and research will also be likely to remain as a national system. Nevertheless, doubts have recently been expressed in Parliament about the coherence and effectiveness of the approach, even within limits.⁸

Meeting these challenges will entail careful thinking about how education policy and devolution could be tuned together to: a) make best use of existing institutional frameworks, improving support for parts that are more fragile and avoiding damage to stronger elements; b) improve the extent to which organisations in the landscape work with each other; and c) ensure that skills training and development is happening in concert with efforts to support firms and other organisations in other ways. We want to look in more detail at what may constitute this holistic approach and the role of universities within it.

⁷ E.g. Professor Alison Wolf, and the Think Tank Policy Exchange.

⁸ House of Commons (2015) *ibid*.

The skills ecosystem

The 'skills ecosystem' is a conceptual framework that has the potential to move us towards these aims. The 'skills ecosystem' idea points instead to the real-world influence of institutions (which may be social norms or corporate structures, and may be formal or informal) and the interaction between them. Finegold, for example, devised a way of seeing the 'skills ecosystem' that is rooted in a natural ecology metaphor, and which was later adapted with practical examples by Buchanan (et. al.)⁹:

A catalyst

– some event or external trigger that initiates the living reaction (e.g. government investment or demand).

Fuel or nourishment

– to sustain the growth of life on an ongoing basis (e.g. leading-edge research-based universities supplying high quality graduates and access to venture capital).

Supportive host environment

– a set of environmental conditions that enables young creatures to grow to maturity (e.g. telecommunications, international airports, technology parks, a regulatory regime which encourages risk-taking, and a living environment attractive to knowledge workers).

High degree of interdependence

– part of what makes this a system, and not simply a group of separate organisms sharing the same physical space (e.g. collaboration between firms to aid learning, adaptation and development).

This idea can be simplified by establishing some very clear principles. First, that an ecosystem of skills is an ecosystem not just a supply system – it involves mutual concern for the supply of skills and for the real-world skills needs of organisations, including a concern for improving the way skills are utilised by those organisations.

To do this the system needs both education and innovation functions working together. Second, skills ecosystems respond quickly to changing needs because they are underpinned by a range of strong institutional relationships across multiple sectors. To achieve this, the system needs leadership and central points of connection. This is all central to productivity, and hence stronger growth, because it helps to put the right skills in the right organisations at the right time.

The ecosystem approach thereby moves us away from simply 'training to meet needs', and towards the much broader and more fundamental aim of 'making better labour markets' in the round. This necessarily involves the availability of high-quality skills-based courses at an increasing level of sophistication, but it also means those courses must be developed in partnership with the organisations that will rely on the skills they generate, and indeed working with those other organisations over the long term to change the way they produce products and services and indeed change the design of jobs involved in those processes. This creates a virtuous circle – by increasing both the demand for and supply of advanced skills, and by forming a profile of skills better tuned to the needs of organisations in the ecosystem.

To make this work effectively, skills ecosystems must be regionally integrated, highly diverse, with some stable formal institutions at their core that can fulfil the full range of critical functions in educating for skills alongside supporting graduate work placement, innovation, business networks, consultancy and cultural leadership. Our case is that modern universities are strong and lasting multi-functional institutions where many of the other players are more fragile (because they are more vulnerable to market fluctuations, public spending restraint, or both). They can provide a reliable pipeline of advanced skills in their regions but also support to external partners in numerous other ways.

⁹ Original typology from Finegold, D. (1999) *Creating Self-Sustaining High Skill Ecosystems*, Oxford Review of Economic Policy 15:1, examples in brackets from Buchanan et. al. (2001) *Beyond Flexibility: Skills and Work in the Future*, Sydney: New South Wales Board of Vocational Education and Training.

This ecosystem approach has been seen to work in practice in numerous cases around the world. For example, the original studies that provoked the ecosystem metaphor observed the effectiveness of skills supply and utilisation in California.¹⁰ It has been very explicitly taken as a design model for public policy in several Australian states since the mid-2000s.¹¹ The particular role of universities in delivering skills for regions in concert with wider support for innovation and other economic development functions has been well established through studies using a range of methods and covering the UK¹² as well as international examples from across Europe¹³ and the rest of the world¹⁴. On top of this base, recent policy developments in England demand that universities respond to change in the skills landscape.

Universities have responded to calls for change in course design, curriculum teaching methods to tune them for skills formation. For example, there has been increasing deployment of work placements as an integral component of programmes, learning spaces remodelled to resemble workplaces in different sectors (often supported by investment in advanced technology), and increasingly make use of forms of assessment that are not only based on long form essays but call on students to offer high quality concise responses and use different forms of media. Universities also extensively support extracurricular activities such as volunteering, sports and societies and student representation; these are a good in themselves, but are also a key way in which students learn real-world skills ranging from financial competence to diplomacy. These measures are all fundamental to a skills-centred approach.

Externally, universities have responded to the government's 'academies agenda' by sponsoring academies and multi-academy trusts and opening a number of free schools. They have

played a further role in diversifying the education system and increasing the number of potential progression pathways available to young people by partnering with employers to open University Technical Colleges (UTCs), specialist academies for 14-19 year olds that aim to bridge the gap between education and employment by offering a blended curriculum developed by the sponsoring university, FE college and employers in partnership. Emerging policy on extending apprenticeships has required very closely joined-up working relationships between employers, colleges and universities, who have jointly developed higher apprenticeships at Levels 4 and 5 and degree apprenticeships at Levels 6 or 7. Higher and degree apprentices combine full-time employment in the workplace with study for a Bachelors or Masters degree, thereby gaining invaluable real-world experience, earning a wage and achieving an internationally recognised qualification.

Universities have been similarly responsive to structural and policy shifts influencing workforce skills that have seen oversight of adult education and training shift to sub-regional level. They play a very important role within Local Enterprise Partnerships. The overwhelming majority of LEPs have at least one university representative sitting on their board; university staff often lead skills-related sub-panels and universities have played a key role in shaping overall LEP strategy and skills-related priorities. Universities have also been instrumental in working with their LEPs to capitalise on emerging opportunities linked to the Regional Growth Fund, European Structural and Investment Funds and new initiatives like the University Enterprise Zone pilots. In the case of European funding, there is now obviously doubt about where continued funding for these areas of investment will come from or what form it will take, but universities have shown themselves to be adept at responding to such changes in the past.

¹⁰ Finegold, D. (1999) *ibid.*

¹¹ Payne, J. (2008) 'Skills in context: what can the UK learn from Australia's skill ecosystem projects?' *Policy and Politics* 36:3 also Hall, R. & Lansbury, R.D. (2006) 'Skills in Australia: Towards Workforce Development and Sustainable Skill Ecosystems', *Journal of Industrial Relations* 48:5.

¹² Hogarth et. al. (2007) *Employer and University Engagement in the Use and Development of Graduate Level Skills*, DFES / University of Warwick.

¹³ See European Commission (2011) *Connecting Universities to Regional Growth: A Practical Guide* for a very useful framework and set of case studies.

¹⁴ Drucker & Goldstein (2007) *Assessing the Regional Economic Development Impacts of Universities: A Review of Current Approaches*, *International Regional Science Review* 30:1.

Developing stronger skills ecosystems

A relatively straightforward starting point for advancing these ideas into the realm of actual policy and practice could be to develop a 'charter for thriving skills ecosystems'. To stimulate that possibility, we have drawn a template for such a charter that regional leaders could follow and

test their strategies for pursuing regional skills goals against. This not a prescriptive blueprint (as no single blueprint would work in every regional context), but rather a set of indicators that would be true if a region had a high-performance skills ecosystem.

A charter for thriving skills ecosystems?

Productivity will be enhanced where:

- i. Skills formation is not seen as an end in itself, but as a means to achieving improved productivity, with an emphasis on forming skills that enable people to live and work more effectively.
- ii. Responsibility and accountability for skills formation strategy is devolved to a large extent to local and/or regional decision makers.
- iii. Best use of limited resources is understood as a shared challenge across local/regional government, colleges, universities, and firms and organisations that train; there is a clear view of the contribution all the players make and they are all open to using resources differently.
- iv. All programmes at all levels and in all educational settings are designed to promote skills formation of a relevant kind and at an appropriate level; technical ability comes in many forms and may be central to even the most 'academic' subject.
- v. Schools have strong relationships with local businesses, voluntary organisations, colleges and universities, which helps them to promote ambition and progression.
- vi. Colleges, universities and other providers work together very closely to create diverse pathways people can follow towards becoming more skilled; these pathways are flexible and help people to form a range of different skills, at different levels, in different settings, and at different times.
- vii. Universities and colleges are equally concerned with creating more demand for skills and supplying them, by supporting innovation and helping businesses to grow.
- viii. A high proportion of working people are engaged in workplace training or skills-focused programmes at a university or college.
- ix. A pro-skills culture exists in local and regional communities; that is, being skilled at any level is talked about positively and skilled people are represented positively in public affairs and in the media.

Partnership is critical to the success and performance of skills ecosystems. This depends first on openness to a philosophical perspective that we have argued here: that all partners are involved in both the demand for, and supply of, skills (albeit to a greater or lesser extent). A wide range of viewpoints from all parts of the real economy within the functional area of the ecosystem must be heard. This perspective reshapes the discussions that partners can have and makes the overall partnership deeper and more embedded. The practicalities of this could be for LEPs to extend the role of consultation networks in their governance, and in particular to look at the makeup of their boards to ensure that the voice of the 'supply side' is not reduced to a single individual – more plurality is required. Specific options to improve the function of these structures might include:

- Ensuring representation of multiple higher education institutions on LEP boards (and where that is not feasible, ensuring strong HEI involvement in other parts of their governance structures).
- Increasing the number of shared board members where LEPs overlap, and increasing shared stakeholder engagement programmes in LEP overlap areas; with the aim of joining up policy better across broad economic regions.
- Asking all LEPs to carry out mapping exercises in their area of focus, to understand the complexities of skills supply and demand in the context of other factors; a common approach would allow a rich national picture to be developed.

But these are only relatively tightly confined measures. In the future, system co-ordination may need to be broader still, and should engage with and look at skills issues together with a range of other policy issues. As SKOPE puts it¹⁵: "skills policy needs to be conceived and framed within the context of parallel measures on labour and product market regulation, people management and employment relations, workplace innovation, efforts to tackle low pay and in-work poverty, business improvement and economic development". New combined authorities may be well placed to lead this integration agenda

as they come into being; LEPs should be strengthened to do similar in other contexts; in both cases, universities could support it through consultancy and applied research.

As combined authorities begin to come into being, the skills ecosystem approach will become more important, and should also inform new policy options for regional partners to explore. In particular, there may be ways that policy could bring together a more cross-institutional system for financing some aspects of the skills landscape. These ideas would need further discussion on the principles and merits, and considerable technical work to test their viability. However, they do illustrate the potential of stronger regional partnerships. Other measures should be put in place where appropriate to achieve stronger integration (for example by positioning directly elected Mayors as LEP chairs, or similar).

It will be worth exploring whether increased co-ordination of additional skills spending within a given skills ecosystem, that could be financed with resources of several players within it, could deliver improved outcomes. For example, multiple universities and larger businesses could pool resources in a city-region to fund an expanded skills programme, attracting increased external funding and achieving multipliers of value as a result. A parallel may be recent cases where multiple local authorities within city-regions have pooled resources within joint transport bodies, to achieve better value and more integrated systems. Such an approach would unify the interests of skills demand and skills supply at the regional level in a sophisticated way, and intensify collaboration efforts.

It is also conceivable that there could be a partial answer to problems around short courses and equivalent and lower qualifications ('ELQs') for which income-contingent loans from the Student Loan Company are not presently available (with a few exceptions, mainly in the case of STEM subjects). With the right co-ordinating infrastructure, new combined authorities could be given the option to pay the lending costs (i.e. the RAB charge) for student loans to cover short courses and/or ELQs for people living within the area covered by that authority. Decisions about

¹⁵ Keep, E. (2014) *ibid.*

what courses to cover would of course be taken with a view of regional skills needs and usually to increase the supply of shortfall skills. It should be noted that at least some architecture for 'billing out' RAB charge costs already exists, as this has to be done for the devolved nations.

At larger scale, and in the longer term, new options may become necessary to achieve synergy between city-regions where combined authorities have come into being. There are now several emerging 'super-regions' in the UK – the 'Northern Powerhouse', the 'Midlands Engine', and arguably the 'Great Western Corridor' from London to Cardiff. If these 'super-regions' are to become truly powerful agglomerated economic regions to rival those of a similar scale in Europe, then strategies for talent accumulation and retention must be developed at a higher level. This may require new structures for collective action at a level between combined authority and central government, new shared infrastructure programmes, and indeed new collective financial arrangements to support that. To be clear, we are not proposing regional assemblies – whatever this looks like it must be lean and able to operate at pace. There will, however, be a gap to be filled here as substantial resources move from the centre to the city-region, and that needs to be thought through now.

A major skills ecosystem in practice

Universities work hard to support regional skills ecosystems in ways that are highly diverse and cross many different institutional functions, relationships and areas of activity. To illustrate how these different functions, relationships and activities play out together in real-world situations, we will now turn to present a deeper examination of skills ecosystems as we find them in one major British city-region – Greater Manchester.

We look across this city region through seven skills-related lenses, drawing key examples of how universities are working with other players in their ecosystems to generate increased or improved skills outcomes. **These seven lenses are:**

- Skills-rich courses for diverse students
- Graduate recruitment
- Supporting people in the workforce
- Knowledge exchange
- Enterprise support and innovation
- Consultancy and applied research
- Informal activities such as facilities and wider staff involvement in the local community

It is important to note that although we take illustrative examples of particular themes from particular universities, these are not exclusive and there are many points where other universities in the city will be working on that theme as well as the specific example we cite.

Manchester: Profile¹⁶

Greater Manchester is an urban conurbation with a population of around 2.7m, comprised of ten metropolitan boroughs. It is situated at the heart of the 'Northern Powerhouse' agenda. This is clearly the most advanced case of new forms of devolution and regional investment. Driven hard by HM Treasury, development has been moving at pace in recent years, and has the momentum to continue following a major government reshuffle. Beginning with Manchester as a pioneer, there

is nevertheless considerable interest in building a strong economic super region spanning the north of England from Liverpool to Hull, as far north as Newcastle and as far south as Sheffield. 'Northern Powerhouse' names a broad policy agenda, not a single coherent programme linked to one particular government department or regional body, and conceptually it covers several contiguous metropolitan areas. It should be no surprise that these areas have some of the most LEP overlaps in the country, although there is a single Greater Manchester LEP.

- The population of Greater Manchester grew by 6.5% (176,300) between 2003 and 2013, and central Manchester local authority saw its population grow by 17.8% (+77,700) between 2003 and 2013 – more than double the UK average over the same period.
- The Greater Manchester economy generates £56 billion of gross value added (GVA) on an annual basis (e.g. £56 billion of real value produced in the economy, like national GDP), higher than the GVA of the North East (£45 billion), West Yorkshire (£46 billion), Merseyside (£27 billion), and accounting for nearly 40% of GVA in the North West.
- There are 1.39 million people working in Greater Manchester in 97,500 businesses. Around 110,000 additional jobs are forecast within Greater Manchester for the period 2014–24 by the Greater Manchester Economic Forecasting Model (GMFM).
- Greater Manchester has 274 schools which educate children at a secondary level. Of these 41 are independent schools. Greater Manchester has one of the largest student populations in Europe. There are around 100,000 people studying at five Higher Education Institutions, of which 17,500 are international students. There are 10 Further Education colleges, 11 sixth form colleges and over 50 work-based learning providers in the Greater Manchester Learning Provider Network, providing education and training for over 70,000 young people across Greater Manchester.

¹⁶ Data in this section sourced from New Economy (2015) *Greater Manchester Key Facts*.

Manchester: The skills challenge

In Greater Manchester in 2015¹⁷:

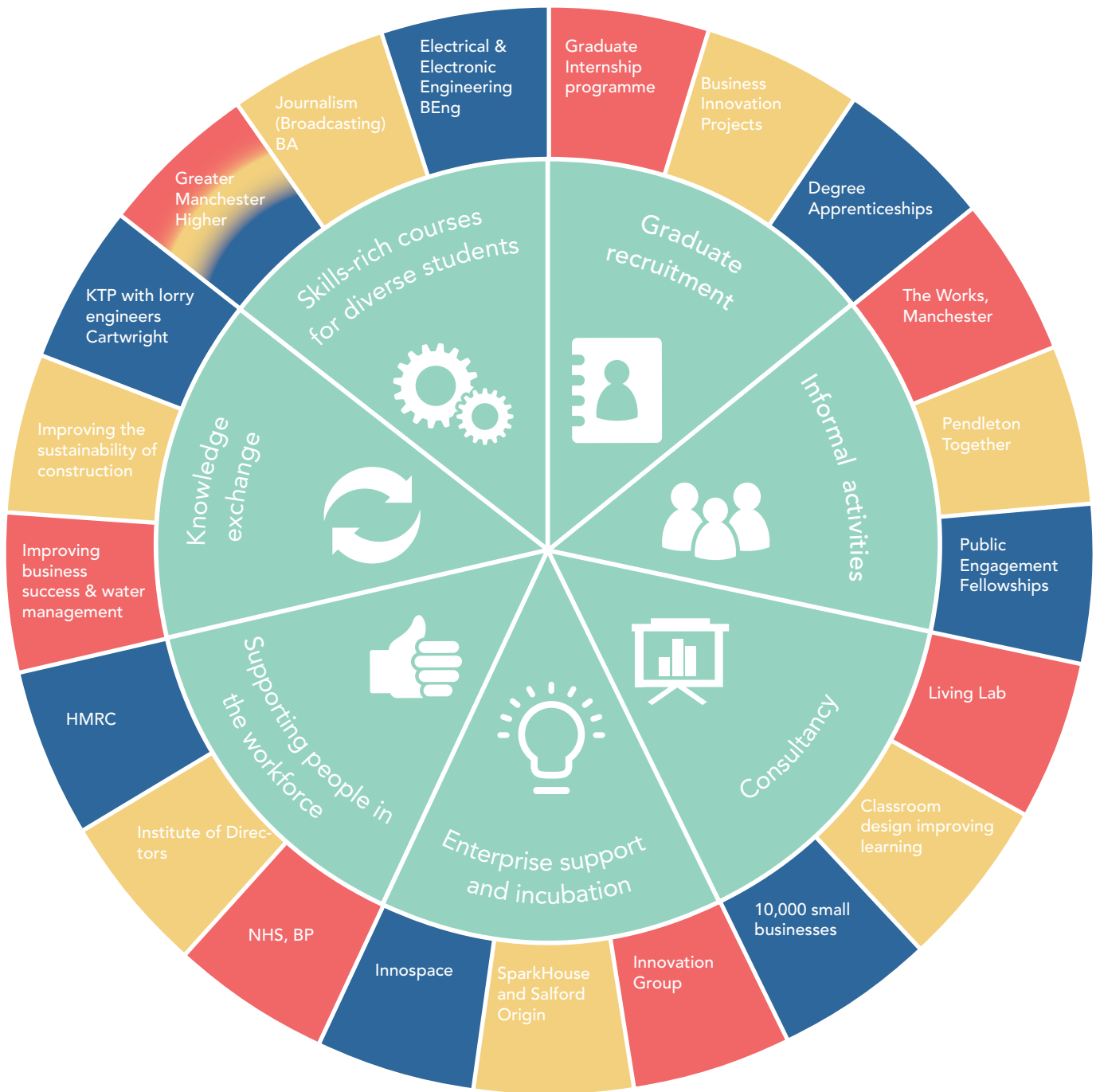
- 553,000 people aged 16-64 are educated to degree level or higher. This is 32% of the working age population. At a UK level the figure is 35%.
- 200,800 people aged 16-64 have no qualifications. This is 12% of the working age population. At a UK level the figure is 10%.
- 294,200 people aged 16-64 have an NVQ level 3 (2+ A Levels) qualification only. This is 17% of the working age population, in line with the UK average.
- 309,000 people aged 16-64 have an NVQ Level 2 (5+ GCSEs at grades A*-C) qualification only. This is 18% of the working age population, slightly above the UK average of 17%.
- 454,000 people in Greater Manchester aged 16-64 and in employment are educated to degree level or higher.
- 67,000 people in Greater Manchester aged 16-64 and in employment have no qualifications.
- In the 2012/2013 academic year there were 30,090 apprenticeship starts in Greater Manchester, of which 55% were undertaken by people aged 25 and under.

Greater Manchester is growing in terms of both population and economic output, but there are significant challenges. The nascent Greater Manchester Combined Authority notes that: "whilst our economy has grown, our skills base and productivity has not kept pace, and we have not been able to reduce dependency or close the gap between the tax that is generated here and the cost of public services. Our productivity gap is in part due to lower skill levels and lower levels of economic activity than the South East: 11.6% of people in GM have no qualifications, compared to 9.9% nationally, and 31.0% of people in GM have a degree level qualification or higher – more than the North West figure of 30.3% but less than the national average of 34.2%. If we are to fulfil our growth potential, we must address that gap".¹⁸

¹⁷ Ibid. New Economy (2015).

¹⁸ GMCA (2014) *A Plan for Growth and Reform in Greater Manchester*.

Manchester skills ecosystem



- University of Manchester
- University of Salford
- Manchester Metropolitan University
- University Partnerships

Manchester skills ecosystem: deep dive

Skills-rich courses for diverse students



In partnership with the University of Bolton, and eight colleges across Greater Manchester, the Universities of Manchester, Salford and MMU support 'Greater Manchester Higher', one of the HE regional outreach networks funded through HEFCE's NNCO programme (National Networks of Collaborative Outreach) to encourage non-traditional students into Higher Education. The partnership engages with 1000s of pre-16 learners across hundreds of events, mostly from schools in Greater Manchester and Cheshire. Their targeted outreach programme includes a combination of campus visits, subject specific sessions, IAG stands in schools, mentoring and residential summer schools. The events are targeted at pupils under-represented in Higher Education, with over 70% of engagements taking place with schools among the 40% highest nationally for percentage of pupils on free school meals.



The University of Salford's (UoS) BA Journalism (Broadcast) course is based at MediaCityUK, among more than 150 other businesses. As its location suggests, the course is very industry-focussed. A professional practice module in the third year requires students to undertake a placement at organisations such as the BBC, ITV, Huffington Post and Vogue as well as Manchester United, Salford Red Devils and FIFA, among others. Students can also undertake international reporting trips to places such as Brussels and South Africa. The course is accredited by the National Council for the Training of Journalists (NCTJ) which offers students the opportunity to graduate with a degree and an NCTJ Diploma. Industry connections mean the University regularly hosts guest speakers and workshops from staff at the BBC, ITV, local and national newspapers, radio and online media, all of which support the course. Graduates go on to a range of careers in social media marketing, PR and multimedia websites as well as more traditional journalism routes working for organisations such as ITV, BBC and the Manchester Evening News.



All courses at Manchester Metropolitan University (MMU) are built around project-based learning modules that are designed to use 'live projects' from industrial partners and professional contacts providing students with a real-world, multi-disciplinary context for their studies, from day one. On the Electrical and Electronic Engineering course, for example, students learn and apply the fundamentals of engineering science through practical applications, using up to date equipment and practice. As well as 'live' projects that are part of the core curriculum, all students have the option to go out on paid placements after their first two years of study and of those that take up this opportunity, most receive job offers from their placement employer. A rich programme of extra-curricular projects including Engineers Without Borders, Formula Student and inter-university challenge competitions give students practical experience of managing projects, budgets and time.

Manchester skills ecosystem: deep dive

Graduate recruitment



The University of Manchester set up the Graduate Internship programme to provide a range of paid, graduate-level positions, based in the region, that boost employability through gaining valuable work experience and building a professional network across the North West. The programme creates and sources opportunities in a range of small to medium sized companies as well as in the University itself. Internships last between four-12 months across a variety of sectors and are open to students from any degree subject.¹⁹



The University of Salford offers a wide range of work-based and placement opportunities to smooth transitions between the education system and the workplace in Greater Manchester. Business Innovation Projects, for example, provide postgraduate taught students within Salford Business School with an opportunity to complete the final part of their Masters degree by undertaking a live industry brief. This brief is set by an external partner organisation who may be an SME or a larger national or international organisation and students work on-site or remotely to meet set objectives over a three- to six- month period. For the student, this is valuable because it enables them to apply their learning in a real-world professional setting, while the business receives expert assistance at minimal expense.



More than 60 of the UK's first degree apprentices have enrolled in the new Degree Apprenticeship in Digital & Technology Solutions at MMU, which integrates academic learning at degree level with work-based training. The course has been designed and developed by the Tech Partnership and the University together with leading regional employers such as Barclays, AstraZeneca, Lloyds Banking Group, Thales, Network Rail, and DWP, among others. Apprentices study towards a BSc (Hons) in Digital & Technology Solutions at the Business School, while working for their employer. The course prepares them to work in a variety of IT related roles and covers a flexible curriculum, enabling specialisation in either software development or business.

¹⁹ For more information see: www.careers.manchester.ac.uk

Manchester skills ecosystem: deep dive

Supporting people in the workforce



The University of Manchester provides continuing professional development across a wide range of subject areas including computer science, health ethics and law, and life sciences. For example, the University of Manchester's Alliance Manchester Business School works with many of the world's most prestigious blue-chip companies and public sector organisations such as the NHS, BP, Talk Talk and YorkshireWater, in order to address real life challenges and help them to drive their businesses forward.²⁰



The University of Salford runs a training franchise for the Institute of Directors which brings several cohorts of businesses together every year to develop directors' capabilities for leading their businesses. The business delegates are encouraged to share experiences and knowledge and to retain contact after each training course.

Universities in the region are at the forefront of developing new degree apprenticeship programmes. In one case, a partnership between the University of Salford, Trafford College and Siemens has outlined a new degree apprenticeship which would allow company recruits to study block release at Trafford College and the University of Salford, working seamlessly from Higher National Certificate/Higher National Diploma to Bachelor of Engineering level.



Since 2012 MMU has been working with HMRC to deliver CPD to staff. HMRC employees are able to access a BA (Hons) Degree in Professional Studies in Taxation, accredited at the University. It is one of a suite of employer-based training contracts run by the Faculty of Business and Law that includes partnerships with Tesco and JD Sports, among others. The University helped HMRC design and implement two 30-credit work-based learning units that reflect on how leadership and behavioural competences have been developed in applying the tax knowledge on live cases. HMRC is progressively integrating these units with their six-monthly internal appraisal system. The first cohort graduated in 2014 with 87 students and numbers are expected to rise to 200 per year. In 2013, the University won a further tender to deliver an MSc in Taxation and Fiscal Policy for 21 senior HMRC policy staff, with a planned second cohort in January 2016.

²⁰ For more information visit: www.mbs.ac.uk

Manchester skills ecosystem: deep dive

Knowledge exchange



The University of Manchester has been working with APEM, Europe's leading independent environmental consultancy, over a number of years to help the company gain an insight into the factors that influence algal blooms, which can reduce water quality and also cause health problems if left unchecked. The partnership is ensuring APEM's success while also providing students with an insight into commercial practice in the environmental sector. Through this work the University is also contributing to improvements in the management of urban bodies of water in Greater Manchester and the wider UK.²¹



University of Salford researchers worked in partnership with UK local authorities to improve procurement practices. They worked with over 70 clients including 80% of Local Authorities in the North West, supporting £2,500m of construction and design work (to 2009). The team developed new procurement tools including the Key Performance Indicator Engine, developed with Constructing Excellence, an online tool used by over 150 organisations, which has generated more than £200,000 in related licence fees, consultancy and training. They have also produced a local economic multiplier methodology which calculates the wider economic and social value of projects. The UK government have approached the team to provide advice and share their knowledge. For example, they joined the joint steering group set up by the UK government assessing the effectiveness of current frameworks for construction.



MMU is amongst the top 10 universities in the UK for the number of Knowledge Transfer Partnership (KTP) projects with small to medium sized businesses operating across the region, with academics working alongside Pirelli, Bobst, Unipart Rail and many more. For example, digital designers from MMU and lorry engineers Cartwright joined forces to create a new truck trailer, which saves up to 18% fuel compared to previous models. The ultra-aerodynamic trailer was designed by KTP associate and MMU graduate Anthony Bukowski using 3D design and wind tunnel modelling, and Dr Peter Twigg, from the School of Engineering. The new trailer reduces drag and cuts fuel costs for customers, while the 3D modelling technology is a much quicker and more cost-efficient way to test new designs. The partnership was nominated for the Engineering Excellence prize at the KTP Awards 2014, sponsored by the Royal Academy of Engineering.

²¹ For more information visit: www.manchester.ac.uk/collaborate/business-engagement/knowledge-exchange

Manchester skills ecosystem: deep dive

Enterprise support and incubation



The University of Manchester Innovation Group (UMI3 Ltd) has two operational divisions: its Innovation Centre (UMIC) and its intellectual property commercialisation services (UMIP). UMIC provides high quality premises for emerging biotech and technology companies and bespoke conferencing and events facilities for professionals and academics. Since the Group's inception in 2004, 2,300 invention disclosures have been received, £225m has been invested by venture funders in spin-outs, and 30 spin-out companies have been established. In addition, 87 emerging businesses have been supported including 2-DTech Ltd, a supplier of graphene and advanced 2D materials and 1,200 jobs have been directly or indirectly created.²²



University of Salford's Careers & Employability team works closely with academic staff, to ensure that courses include and promote entrepreneurship across all disciplines. Currently over 2,300 students are actively engaged in enterprise activity across courses as diverse as Languages, Health, Computing, Media and Art. In the School of Arts and Media, for example, the University established a one-day Creative Business Boot Camp, giving nearly 300 students in Fine Arts, Performance and Photography a chance to develop skills in entrepreneurship. In the School of Health Sciences bespoke enterprise sessions were established to help students develop plans to start a private practice business. The team has a wide portfolio of extra-curricular enterprise support opportunities, having invested £1m in student and graduate entrepreneurship in the last five years. The Careers & Employability department also manages two dedicated incubators where 30 Salford students and graduate businesses are currently being incubated and supported.



MMU recently made significant additional investment in Innospace, its graduate start-up business incubator. Innospace offers start-ups flexible office and meeting space, the full range of business support services, and mentoring and networking events for the first 36 months of their existence. It currently supports around 100 start-up and pre-start up businesses and has ambitious plans for growth over the next few years. Many of the business that successfully 'graduate' from the incubator stay in the local area and MMU is building a network with alumni-entrepreneurs to support the current cohort of start-ups. Innospace has supported over 350 new businesses and helped to create 500 new jobs since it was established in 2007 and MMU has also recently partnered with Stockport Council to invest in Market Studios-Stockport, a new creative industries incubator that can accommodate up to 25 creative start-ups.

²² For more information visit: www.unic.co.uk

Manchester skills ecosystem: deep dive

Consultancy and applied research



Through consultancy services universities engage with local and national businesses to apply their knowledge to complex business problems and drive growth and development as a result. For example, the University of Manchester provided consultancy to EDF Energy to investigate environmentally friendly oils for use in their power transformers. The University team contributed to EDF Energy's environmental agenda and its aim to be the first energy company to develop and operate an environmentally friendly high voltage power transformer in Europe. Alongside this consultancy the team also completed two phases of a research project which looks at further uses of 'green' oils. This work will help the UK to achieve a more sustainable and environmentally friendly energy supply.²³ UoM has also established a 'Living Lab' to develop the university's campus as a site for applied teaching and research around sustainability and low carbon. It is a platform for collaboration between researchers, students, external stakeholders and the Directorate of Estates and Facilities to deploy and monitor new technologies and services in real world settings and provides opportunities to work together to pioneer new ideas and solutions for sustainability.²⁴



Academics from the University of Salford's School of the Built Environment were called to investigate the links between classroom design and learning within primary schools. Looking at the environmental factors affecting 34 classrooms across seven schools, alongside the academic progress of 751 pupils, the project found that almost three-quarters of the variation in pupil performance could be attributed to design and environmental factors. All things being equal, the academic performance of a child in the best environment could be expected to be 25% better than an equivalent child in the "poorest" classroom environment. These findings are significant as a range of environmental factors are inherent in the initial building design and so are often very difficult (and costly) to change once the school has been built. For example, the amount of natural daylight and how it varies throughout the day has an important influence on the learning environment, but the daylight characteristics for a classroom are effectively fixed by the architect's original design and the building's orientation. Designs for schools are now looking to include best practice design guidelines to ensure the best possible learning environments.



MMU's 10,000 Small Businesses is a practical programme funded by the Goldman Sachs Foundation and designed to help the leaders of established small businesses and social enterprises define and achieve their business growth aspirations. The programme offers practically-focused business and management education, delivered over 100 hours and focused on action-based learning. The curriculum is designed by world-class international, national and local experts in entrepreneurial learning and delivered by a combination of practitioners and experts with the practical experience and understanding of small business leaders' needs. Since 2011, more than 200 North West enterprises have benefited from the programme - delivered in the region by Manchester Metropolitan University's Centre for Enterprise. Goldman Sachs figures show participants are growing their employment by an average of 16-26% per year after participating in the programme, and growing turnover at 23-42%.

²³ See <http://documents.manchester.ac.uk/display.aspx?DocID=14790>

²⁴ See: <http://universitylivinglab.org/projects>

Manchester skills ecosystem: deep dive

Informal activities e.g. facilities, staff involvement



The University of Manchester is leading a unique and award-winning initiative to address the issue of skills shortages and long-term unemployment in the University's local community. Working with other major employers, including Manchester Metropolitan University, Greater Manchester Police and the Royal Mail, UoM established an employment and support centre in its neighbouring ward of Moss Side ward which delivers skills and employability-boosting programmes and support. The University advertises all vacancies up to £25,000 per annum via The Works centre, which has created significant impact including::

- Establishing the UK's first and only HEI-led employment facility in a local community.
- Supporting 2,390 people into work since 2011, 97% of whom were unemployed.
- Creating £38M of economic value through the reduced costs to society of unemployment.
- Impacting positively on employee well-being and the University's wider supply-chain.²⁵



The University of Salford is a partner in 'Pendleton Together', a £650 million regeneration project designed to completely transform the Pendleton area of Salford. Work on the first phase of project, which includes building more than 1,600 new homes and refurbishing 1,250 existing homes, is already underway and began in early 2014. The project is being delivered by the Pendleton Together consortium, led by housing organisation, Together Housing Group, building and regeneration specialists, Keepmoat, Salford City Council and the University of Salford. The University of Salford uses its academic and research expertise and student innovation to underpin and help shape the future direction of Pendleton Together initiatives. The University delivers a number of projects covering ecological sustainability, healthcare, energy, archaeology and independent living as is currently actively engaged in over 20 research, engagement and volunteering projects within that partnership.



MMU established a Public Engagement Fellowship scheme to fund projects addressing real needs identified by local communities. The £60,000 programme has directly involved over 570 local people from 66 different community organisations, working alongside 74 members of MMU staff and students. The projects reflect the diversity and passions of local people ranging from a film about the experiences of the first West Indian and Sikh families to settle in Manchester in the 1960s, to open source software programming workshops and multimedia projects with local schools, to a conference addressing the high exclusion rates of young black males in Manchester's education system.

²⁵ For more information visit: www.theworksmanchester.co.uk

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