Small Project Report

Talent Management in Small Advanced Manufacturers

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About PIN

The Productivity Insights Network was established in January 2018 and is funded by the Economic and Social Research Council. As a multi-disciplinary network of social science researchers engaged with public, private, and third sector partners, our aim is to change the tone of the productivity debate in theory and practice. It is led by the University of Sheffield, with co-investigators at Cambridge Econometrics, Cardiff University, Durham University, University of Sunderland, SQW, University of Cambridge, University of Essex, University of Glasgow, University of Leeds and University of Stirling. The support of the funder is acknowledged. The views expressed in this report are those of the authors and do not necessarily represent those of the funders.

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Talent Management in Small Advanced Manufacturers

The talent-intensive nature of advanced-manufacturing

The success of advanced-manufacturing is central to the UK Government's Industrial Strategy, gearing-up the economy to compete in a new industrial era. This is allied with a commitment to enhancing the productivity and performance of smaller businesses as sources of potential economic growth.[i]

Behind the high-tech products and applications of advanced-manufacturing lies the high-level skills, creativity and innovation of talented people. It is the effective management of these talented people that will allow sectors such as advanced-manufacturing to achieve productivity growth. Talent management involves the systematic attraction, identification, development, engagement, retention and deployment of talented people for future potential or short-term, operation-critical roles.[ii]

Research suggests that effective talent management, and of human resources more generally, is associated with higher productivity and business performance.[iii] With smaller businesses being typically more labour intensive than larger businesses, they might have much to gain from improvements in talent management practices. However, significant knowledge gaps exist on this topic.[iv]

Advice on talent management for small businesses tends to draw lessons from large businesses, for example in adopting strategic HRM and High Performance Work Systems (HPWS). However, given the distinctive characteristics of small businesses and the challenges they face, significant concerns have been raised about whether this advice is inappropriate and unproductive. The rationale for this project was therefore to deepen understanding of talent-intensive, small advanced manufacturers (SAMs) on their own terms; to investigate the challenges, opportunities and the best practices required to unlock the potential for productivity growth through effective talent management.

This exploratory study sought to understand this emerging area in two stages. Firstly, we reviewed the most recent and forthcoming literature to identify the state of the art in terms of small business productivity, talent management and advanced-manufacturing. We then researched and analysed eight case studies of SAMs, developed from management and staff interviews and background research on each business.

This research has produced insights on the talent management challenges and opportunities for SAMs. The challenges they face reflect some shared experiences with other small businesses and some that are more SAMs-specific.

We change the debate on talent management and productive work practices in SAMs by proposing an intermediate stage between relative informality and the implementation of formal HPWS. The intermediate stage acknowledges the need for ad hoc problem-solving in response to operation critical challenges but begins to develop strategic problem solving that engages with different elements of the organisation, leveraging key strengths and building future potential, devising sustainable solutions tailored to the organisation.

Developing responses to problems in this way acknowledges an intermediate phase of development for SAMs such that improved practices come to constitute a bundle of routines tailored to an organisation's needs and avoid a 'formality shock' to the organisation's culture. The development and embedding of this more strategic, future-oriented approach to sustainable, scalable solutions creates an environment that will, at the end of this intermediate stage, become well-suited to the introduction of HPWS.

We present a canvas-based toolkit to guide this process.

Characterising SAMs

The SAMs in our study share many of the characteristics commonly associated with small businesses:[v]

- preferences for informality

- spatial and social proximity

- challenges around resource limitations

- emphasis on a team-ethos

- instances of high dependence on a single client

More particularly, the work of SAMs places them at the boundaries of existing knowledge in their respective fields, at risk of perpetual 'liabilities of newness.' Set within a small business context where staff often fulfil multiple roles, this can create jobs incorporating challenging tasks and varied roles.

These characteristics have important impacts on talent management strategies and practices. We will therefore now describe the main areas of talent management challenge and propose an approach for tailored solutions to these business needs.

Working together side-by-side

The working environment of the SAMs in our study reflected the close social and spatial proximity common to small businesses. The close working environment facilitated communication and information sharing across the different business functions and supported employee engagement.

In particular, the emphasis placed on communication was highlighted as integral to breaking-down barriers between office-based engineers producing designs and the workshop technicians charged with realising those designs. Tackling problems collaboratively and as they arose was felt to enhance the development process.

Managers and employees reported the importance of a strong team ethos in their working environments. Once a level of trust had been established, staff might be granted flexibility around things like time off or remote working. Reflecting relatively high degrees of informality in the businesses, flexibility was tacitly agreed on a give-and-take basis, with staff reciprocating when business demands required longer hours.

The efforts put into achieving a good working environment within participating SAMs delivered benefits for them in respect of talent management. An effective group culture within the organisation can be difficult to achieve and hard for others to copy.

Sourcing and selecting talent

Participants reported various challenges associated with conducting work at the frontiers of advanced-manufacturing:

- no clearly-defined, available talent pool in the labour market

- skills are not clearly signalled or packaged through specific qualifications

- difficulties in learning-through-recruiting from industry rivals when few direct rivals exist

- the depth of expertise developed at giant engineering firms in contrast to the breadth SAMs require

- 'manufacturing' might have a negative image among some groups

Smaller businesses can experience difficulties attracting some types of workers.[vi] [vii] In SAMs these challenges are particularly relevant in attracting talent with the graduate skills necessary to maintain and advance the business.

The existing literature suggests that small businesses are in part unattractive to graduates due to the comparative lack of formal and accredited training available (see below). This lack of training coupled with the more limited opportunities for internal advancement within a smaller business constitute a significant barrier to attracting and retaining graduates.

Interviewees reflected findings elsewhere in the literature that perceptions of an industry might discourage prospective employees.[viii] In the case of SAMs, perceptions of manufacturing as traditional and in decline may be creating recruitment challenges, despite often contrasting with the reality of working in this sector.

Training and development at the frontier

The SAMs taking part in this study accepted that the onus is on them to train and develop employees in the skills they require and to an appropriate level. The situation has arisen owing to difficulties finding the desired combination of skills or attributes.

Participants considered university courses as training some of the necessary skills but not everything that SAMs need. Moreover, given the unusual nature of some of the work being undertaken in these businesses, there are very limited opportunities for hiring trained staff from industry rivals. In response to these shortages, SAMs emphasise 'fit' in selecting new hires and also seek evidence of transferable skills or potential that can be honed into valuable talent for the business.

The training provided in the businesses combined formal training and more informal, on-the-job training, as required by each business and job role. In some instances, the businesses had created a skills matrix for each employee that was incorporated into their periodic review as a way of identifying training needs and closing any specific gaps.

Leaders in the businesses also faced challenges developing their own skill sets. Much of their know-how was acquired through experience on-the-job. Opportunities for formal training, even when subsidised, were not always felt to be aligned with the demands of running a small business. This finding is noteworthy, not least because concerns over manager and leader skills sets are a recognised challenge in small manufacturing businesses[ix] and more generally.[x]

The role of clients

It is important to distinguish SAMs from the global giants of the advanced-manufacturing sector. SAMs might be suppliers to the major firms and benefit from being part of an advanced-manufacturing environment or value chain. However, SAMs often need different skills from those required in larger businesses.

Problems can arise when small businesses are in environments dominated by large players, with small businesses taking their trading environment as they find it and unable to exert much influence. In such circumstances, management practices can be dominated by external partners rather than developed to best suit the goals and circumstances of the small business. This can constrain the ability of SAMs managers to respond effectively to the challenges they face.

In the case studies, there was a tendency towards specialisation where dependence on a single client was high. A strong orientation towards a single client brings benefits in terms of meeting current client needs but it can diminish a business' capacity to attract other clients or develop the skills necessary to compete in other markets. The effect of high-dependence on a single client can render a business vulnerable to losing that client, potentially without the attributes in its workforce necessary for attracting fresh custom.

Tailored solutions for business needs

SAMs are rightly concerned by the challenges identified above, especially those around recruitment and selection. Getting employee selection right is vital for effective talent management and other HR outcomes.[xi] Evidence suggests that hiring the most educated and able workers is associated with increased efficiency and developing the productive capacity of the business.[xii]

Resource constraints might rule out simply buying-in generic solutions, so SAMs often look to their existing strengths to address talent challenges. This produces ad hoc, improvised and often innovative solutions to bespoke problems. This approach can be effective in the short-term but might develop solutions that are unable to develop with the business in ways that could establish an overall approach to talent management.

The common recommendation in response to such challenges is the adoption of HPWS.

High-performance work systems for SAMs

High-performance work systems (HPWS) are strategic bundles of management practices. Evidence suggests that businesses with HPWS have positive business outcomes and a body of work in large businesses supports this. Recently, the presence of HPWS has also been associated with higher levels of performance and productivity in small businesses.[xiii]

However, implementing HPWS in small businesses needs careful consideration. There is:

- no consensus on the specific 'bundle' of management practices associated with high-performance

- a lack of clarity on when a set of practices represents a system

- a range of overlooked challenges concerning implementation[xiv]

- a lack of evidence for whether the effect of gains achieved through higher rates of productivity associated with HPWS is off-set by increased costs of implementing such practices[xv][xvi]

- a significant risk of damaging effective cultures built on informality and flexibility through the 'formality shock' of sudden implementation of formal systems[xvii][xviii][xix]

Proceeding with caution requires considering how processes of formalisation, leading towards practices associated with higher productivity, are to be achieved. We begin by reconsidering best practices in SAMs.

Re-thinking best practices

Many SAMs already possess valuable attributes to address their key talent management challenges. For instance, SAMs reported challenges around identifying and selecting graduate and apprenticeship talent. Research interviews with existing employees highlighted the attractions for talented and ambitious people of working in SAMs. Moreover, the dynamic sector and organisation cultures represent exciting places to work.

Unlocking potential solutions from existing or potential business strengths represents an opportunity to adopt a more strategic perspective on problem solving. This means focusing not only on the immediate problem to be solved but thinking more widely about how problems hamper the business achieving its objectives and how the business can address such problems. By establishing an approach to reframing problems and solutions in the business, SAMs can address today's talent management problems *and* build momentum around how issues can be addressed over the longer term.

The central question for talent management in SAMs is how to move beyond current practices, which might solve short-term problems, towards leveraging business attributes as part of a longer-term strategy.

High-productivity strategic decision-making

In contrasting the relatively informal working environments of many SAMs with the relative formality of HPWS we identify the importance of developing an intermediate stage of development. This intermediate stage requires high-productivity strategic decision-making in response to the bespoke problems faced by small and growing businesses.

In the first instance, problems and solutions can be identified, re-framed and addressed in the following terms:

- *suitability:* practices authentic to the business (its needs and strengths) rather than importing dysfunction and pathology into the business[xx]

- *sector-specific:* attuned to the challenges of advanced manufacturing at the frontiers of innovation

- *strategic:* providing practical, longer-term benefits to the business that can, over time, become part of organisational routines

- *sustainable*: establishing routines that become embedded in business operations

- *scalable:* practices that remain relevant or that can be adapted as the business grows

The final aim of this intermediate stage of development of talent management within the business is a series of solutions that become routinised and, in aggregate, can become an organisation-specific foundation for the development of HPWS. To this end we propose a provisional toolkit to aid SAMs with the challenges of talent management set out in Appendix I.

Appendix I: Toolkit

Based on our analysis of the extant research and the eight case studies, we have developed a toolkit with the aim of aiding SAMs engaging with talent management. The toolkit has been designed to provide a platform for focusing on talent management issues and generating strategic solutions to problem areas as appropriate.

Short-term, operation-critical problems are likely to require a solution prioritised on speed rather than developing a strategic perspective and response. For other problems where a longer-term, more strategic approach is appropriate, we have incorporated a canvas into the toolkit, inspired by The Business Model Canvas.[xxi] Taking a well-known and user-friendly format that prompts consideration of essential matters was felt to facilitate discussion and engagement within businesses or teams using it. The final step is a check of the proposed solution to make sure it fits the business.

The toolkit remains provisional and, as part of ongoing work stimulated by this exploratory Productivity Insights Network project, we are due to hold a workshop with the Advanced Manufacturing Research Centre to 'road-test' the toolkit with SAMs in order to gain feedback and develop it further.

Identify talent in your organisation (people for future potential or short-term, operation-critical roles):

	Rate current capability 1 (low) - 5 (high)	How this impacts on the business (good or bad)	With the consequence that we can / can't…	If a problem, how pressing is it? 1 (low) – 5 (high)
Attract				
Identify				
Develop				
Engage				
Retain				
Deploy				

Outcome (main vulnerabilities and strengths in respect of talent management):
Pressing problems should be addressed right away. To develop a more strategic response please turn to the canvas

Today's situation[1] *Describe current situation*	A better tomorrow *Describe how you envisage the situation when the problem is resolved*	Getting from today to tomorrow *Following idea generation, set out preferred solution*	What have you got already? *Recognise relevant existing strengths / attributes*	Stakeholders *Who has a stake in this solution? Who needs to be involved?*
What can't you do (as well as you need)? *Articulate how the current situation is hampering your business*	What can you now do (better)? *Articulate specifically the tangible benefits that your business will experience*		What do you need? *Identify what you need from whom (e.g. buy-in, resource, time)*	What can you offer them? *For each stakeholder, how can you motivate them to contribute?*

Requirements *For your desired solution, what are the resources (e.g. financial, time, goodwill) you require to make it happen?*	Returns *What are the specific gains you can make (and measure) as a result of your desired solution?*

Action list

Who needs to do / achieve what and by when?

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[1] Canvas idea developed from *The Business Model Canvas.* Creative Commons License Attribution-ShareAlike 3.0 Unported (CC BY-SA 3.0). See Strategyzer.com

Is your proposed solution….	In what ways	Remedial action if not
Suitable: does it meet the needs of your business?		
Sector-specific: does it accommodate sector norms?		
Strategic: does it advance you towards organisation goals?		
Sustainable: is it close to existing practices and ethos?		
Scalable: can it adapt as the organisation changes?		

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[xxi] Strategyzer AG (2019) *The Business Model Canvas*. Creative Commons License Attribution-ShareAlike 3.0 Unported (CC BY-SA 3.0). Canvas in Appendix I is developed from *The Business Model Canvas*; the canvas has been adapted in respect of the focus and terminology presented here. Please refer to the link provided for full details on *The Business Model Canvas*. URL: Strategyzer.com