

Navigating towards hyperautomation and the empowerment of human capital in family businesses: A perspective article.

Abstract

Purpose:

This paper explores the past and future impact of automation on family businesses, with a focus upon the opportunities for human capital empowerment.

Design/methodology/approach:

This paper draws upon a contemporary literature search to examine a range of scholarly and practitioner perspectives of the challenges and benefits of automation, exploring the evolvement towards hyperautomation and the empowerment of human capital in family businesses.

Findings:

Automation, transforming to hyperautomation, general purpose artificial intelligence and beyond has the possibility of radically improving productivity. Fear of job obsolescence has been present from the birth of modern automation, and whilst some jobs are at risk of redundancy, a net gain towards higher skilled labour is already evident. Family business leaders must be prepared to react appropriately to the accelerating war for talent, by implementing a strategy for human capital empowerment.

Originality/value:

This unique paper synthesises developments in automation and proposes a future perspective centred upon the empowerment of human capital in family businesses.

Keywords: Automation, hyperautomation, intelligent automation (IA) artificial intelligence (AI), family business, human capital empowerment

Paper type: General review.

Introduction

Over the last century, family businesses have witnessed a huge rise in automation, from the second industrial revolution with the establishment of mass production to the introduction of computing and technology, leading to contemporary advanced software automation. Yet, perennial concerns exist regarding the propensity for family businesses to be less amenable

to advanced innovation than non-family businesses, diluting their ability to respond efficiently to associated opportunities and threats (Röd, 2019), a position magnified by phases of rapid innovation development such as the COVID-19 pandemic (Chernoff and Warman, 2023, Melović et al., 2023). Concurrently, smaller family businesses without sustained investment in human capital development appear likely to struggle to attract and retain talent during an accelerating period of employment growth (World Economic Forum, 2020, De Kok et al., 2006). Framed within the extant research on automation in the workplace, this paper draws upon a contemporary literature search to examine a range of scholarly and practitioner perspectives in considering the extent of, and pace at which advanced AI and hyperautomation will further develop over the next 100 years, juxtaposed with the effect upon, and opportunities for workforce development within family businesses.

Past 100 years

Modern automation can be traced to the British industrial revolution, 'Industry 1.0', in the 18th and 19th centuries, with the introduction of the steam engine and manufacturing techniques revolutionising agriculture and fabric manufacture, and mechanical automation replacing many labour-intensive processes (Freeman and Louçã, 2001). The second industrial revolution, Industry 2.0, commenced around the turn of the 20th century, heralding mass production using electrical energy the internal combustion engine (Xu et al., 2018). Fordism and Taylorism became emblematic of bulk manufacturing during this period, identifying and applying methodologies to radically improve productivity, with standardisation a core tenet (Taylor, 1911, Hudson, 2009). Fordism broke work down into discrete tasks, allowing the collective workers to generate a form of automated production (Lipietz, 1984).

Indeed, Henry Ford, who played a key role in the second industrial revolution, built up one of the most successful family businesses during this period, despite increasing criticism concerning the de-skilling of the workforce and de-humanisation of work juxtaposed with increasing management control acquired through time and motion practices (Jackson, 2015). The consequential physio sociological impact created by a 23% reduction in the workforce between 1948 and 1956 juxtaposed against a 20% increase in productivity between 1947-1952, ultimately led to deliberate product sabotage by employees (Jackson, 2015). Nonetheless, Ford continues to preserve its position as one of the world's largest automobile manufacturers, whilst maintaining a family company status with significant family shareholdings (Wayland, 2022, Ford Motor Company, 2020). The advent of the printed circuit board and microelectronics gave way to the third industrial revolution in the second half of the 20th century, leading to the development of integrated circuits, microprocessors, programmable logic controllers and the internet (Duggal et al., 2022, Taalbi, 2018). Fears

relating to the displacement of human labour by these new technologies as enablers of automation were evident (Karvonen, 2001), however whilst some jobs were displaced, such as word processors displacing typists, automation via computerisation has not led to mass unemployment (Fleming, 2019).

More recently, automation has developed from principally electrical and mechanical forms towards advanced software based, intelligent automation, with the COVID-19 pandemic providing a catalyst for technological acceleration (Ano and Bent, 2022, Chernoff and Warman, 2023, Melović et al., 2023). Whilst advanced digital technologies facilitated the continuity of many businesses during COVID-19, one must be mindful of the negative effect that remote working may have had, and continue to have on socio-organisational capital, particularly in family businesses, where a sense of imbalance between family and non-family members may exist (De Massis and Rondi, 2020). Further considering contemporary events, although artificial intelligence (AI) was conceptualised in the 1950's (Bruderer, 2016), its recent massification through ChatGPT has raised public awareness that advanced forms of AI are likely to affect the automation of many mundane tasks presently undertaken by humans (Bornet et al., 2020). Whilst concerns of widespread redundancy remain (Price, 2021), automation has potential to remove the need for simple, repetitive tasks to be done by a human (Haleem et al., 2021) shifting workforce skills dynamics by allowing higher skilled employees to manage increased productivity, thus improving overall business value (Cameron, 2022), and facilitating them to outperform less innovative businesses (Geroski et al., 1993). Whilst caution should be exercised not to treat family businesses as an homogenous group (Westhead and Howorth, 2007), research has demonstrated that family businesses may be more risk averse to innovation activity (Classen et al., 2011). It is therefore imperative that family businesses appreciate the negative impact that not embracing automation and broader technological innovation may have on them (De Massis et al., 2013).

Future 100 years

In addition to, and supplementary to AI, other software automation technologies are gaining traction. To meet the challenge of automation across disparate systems, the use of robotic process automation (RPA) has recently accelerated to facilitate interdependent automation, although as systems develop to permit simpler data access, RPA usage may start to wane (Mendling et al., 2018). Business process management (BPM), although traditionally embracing the optimisation and exploitation of existing processes, is evolving to incorporate the early stages of explorative processes (Helbin and Van Looy, 2021, Kerpedzhiev Georgi

et al., 2021). Integration Platform as a Service (iPaaS) technologies, allow a more technologically democratised approach by simplifying graphical user interfaces to perform API and other integration without the need to employ experts (Bornet et al., 2020). Other technologies, such as lo-code or no-code, are also democratising coding, allowing individuals with limited or no prior knowing of coding to develop methods or process optimisation or automation (Bornet et al., 2020). Hyperautomation, also termed Intelligent Automation (IA), has emerged as a method of using some or all, aforementioned digital technologies to automate as many business processes as possible (Bornet et al., 2020, Haleem et al., 2021). Certainly, the adoption of Industry 4.0 technologies that constitute hyperautomation is seen as essential for family businesses to develop and survive (Kazancoglu et al., 2021). Whilst many companies may have an orientation towards productivity improvement through automation, hyperautomation is an evolution from traditional automation, since it aims to automate as much as economically and practicably possible, using a confluence of modern methods and digital technologies (Bornet et al., 2020, Haleem et al., 2021). Here, the UK Department for Work and Pensions has saved over 2 million business hours and £54m over 4 years, benefitting service provision for citizens (DWP, 2023). Similarly, Lloyds Bank implemented several new automated services during the COVID-19 pandemic, including one introduced in seven days to facilitate mortgage repayment holidays (Major, 2023). Both organisations are rapidly leveraging IA techniques to facilitate opportunities for increased employee creativity, decision making and innovation, enhancing the development of human skills and psychological ownership of work.

Whilst hyperautomation already has potential to remove a wide array of mundane, none value-added tasks (Haleem et al., 2021), introduction of further advanced technology could provide even greater productivity benefits. For example, whilst AI can improve tactical and operational decision making (Duan et al., 2019), generative AI models such as ChatGPT demonstrate substantial improved productivity of university educated professionals in mid-level writing tasks (Noy and Zhang, 2023), thus aiding the development of strategy. AI is expected to develop rapidly over the next few decades, with artificial general intelligence (AGI) widely expected to develop to superintelligence within 50 years (Müller and Bostrom, 2016). The introduction of human level intelligence AGI has the potential to provide far greater levels of automation than presently possible, including tasks performed by highly educated individuals, such as researchers (Müller and Bostrom, 2016). Combining AI and big data (Duan et al., 2019) carries further potential, leading to integrated supply and demand forecasting (Wang et al., 2022) with anticipated customer demands met by automatically regulated supply chains. Hyperautomation will continue to enable machines to

complete a growing proportion of tasks over the next 100 years but the fear of human obsolescence stemming from the Luddites of the first industrial revolution remains (Conniff, 2011) despite the short-term job creation predictions of 12 million by 2025 (World Economic Forum, 2020).

Post-pandemic evidence reveals that family businesses can demonstrate greater adaptive capacity by solving more complex business problems than non-family businesses during crises, however appetite for risky investment in innovation is lower during periods of relative stability (Zapata-Cantu et al., 2023). Likewise, Ceipek et al. (2021) emphasise a prevalence of lagard behaviour, preferring to maintain emotional ties with existing assets rather than embracing advanced technology and embedding proactive innovation management as long-term strategies. The proclivity for spontaneous solutions and short-termism, combined with prioritisation of values-driven approaches over financial achievements may also inhibit early adoption of technology, particularly given the associated HRM challenges concerning roles, responsibilities and productivity (Denison et al., 2004). As such, smaller family businesses which lack sustained investment in sophisticated HRM processes, are likely to suffer disproportionately in a burgeoning talent war within an increasingly challenging global job market, evidenced by growing numbers of unfilled posts juxtaposed with a shrinking workforce of willing individuals (De Kok et al., 2006, Li, 2022). Here, a balanced strategy to maximise profit and shareholder value whilst reducing productivity barriers and the psychological damage caused by meaningless and repetitive tasks will be crucial for future family business viability (Blustein et al., 2023, Mäkikangas et al., 2023).

Concurrently, the current pace of change risks a return to the darker Industry 2.0 days, demanding greater consideration of sustainable resourcing and training, alongside supportive measures to preserve employees' psychosocial well-being. Prolonged periods of pressure, continuous change and a lack of training appear to already be contributing toward a longer-term workforce crisis, exposing a discernible shift in employee demand and personal agency, driving post-pandemic demand for flexible, decent and meaningful employment warned of by Sull et al. (2022). Collectively, these complex uncertainties present a challenging scenario for organisations across the globe. Yet, family businesses' greatest strengths lie in cultures of trust and altruism to foster deep and enduring relationships for socio-emotional wealth (Karra et al., 2006, Zapata-Cantu et al., 2023) providing them with the foundations for unassailable competitive advantage. By treating people as differentiators, and providing safe spaces in which to engage the 'workforce family' to co-create and testing innovative workflows and role design, feelings of mistrust, powerlessness and fear will quickly dissipate (Mäkikangas et al., 2023). Cultivating personal

agency in this way is not only likely to improve the physical practicalities of job roles, but also contributes toward broader cognitive and psychological empowerment (Blustein et al., 2023).

These findings draw together multiple strands derived from contemporary scholarly and practitioner perspectives across the disciplines of engineering, computer science, psychology and family business management to expose a set of recommendations with which to underpin an optimised strategy for human capital empowerment, shown in Figure 1.

Figure 1 - Human Capital Empowerment Strategy

Source: Authors own creation



Conclusion

Automation has accelerated rapidly over the last 100 years, from industry 2.0 through to industry 4.0, and is anticipated to accelerate even more rapidly with the introduction of advanced forms of artificial intelligence and quantum computing. Family businesses will

need to embrace this brave new world and overcome reticence to adopt modern technology, whilst also reflecting upon the history of its evolution to avoid a repeat era of technological enslavement. Instead, an unprecedented opportunity holds promise for leaders to create the optimum conditions for an empowered and highly skilled workforce demanding: sustained and consistent board commitment to exploration of, and investment in innovation; greater openness, responsiveness and flexibility in encouraging new ideas and methods; engagement of employees to link past knowledge with future innovation processes and reconfiguration of workforces. The inculcation of psychological safety across workplace families and teams is more likely to foster conditions for creative and innovative practice, critical in solving problems and providing solutions during periods of job displacement. Such a deliberate human capital empowerment strategy plays to family businesses' unique strengths, reinforcing their position as employers of choice to attract, develop and retain the best global talent. Future research should focus on the challenges and benefits of workplace hyperautomation, specifically the extent to which leadership practice for human capital empowerment can support individuals and teams to adapt and thrive in the age of hyperautomation.

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