

Unlocking new opportunities for people hard-hit by automation and globalization

A Zinc Learning Report

Powered by the Autodesk Foundation



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Foreword

At the Autodesk Foundation, we have been grappling with the challenges and opportunities that automation presents to the global workforce since 2017. Automation and globalization are two of the biggest forces shaping the future of work and our wider society, with gross inequities between winners and losers. To address these inherent inequalities, we back systems and solutions that help at-risk workers prosper in the era of automation in service of a more equitable future.

We partnered with Zinc over the last two years to support its venture building program focused on unlocking opportunities for people and communities left behind by these forces. We felt a wholly new method was needed in the workforce development ecosystem, one that was not unduly reliant on individual worker upskilling or sectoral job creation, which can leave communities vulnerable to the next wave of technological disruption. Zinc intentionally takes a different path by addressing the social and psychological barriers people face in navigating jobs and careers. The ventures that have been incubated through this program represent market-based and tech-enabled solutions underpinned by decades of social science research. They are tackling critical issues such as job quality, access and mobility, mental resilience, and social identities around work. Through both their progress and challenges, these ventures are redefining what a worker-centered approach can look like.

We are still at the beginning of a profound learning journey and know that this will require a risk-tolerant approach in order to uncover new or unconventional ways to address the inequities around the future of work. But we believe those of us in philanthropy need to be continuously looking for new ways to address these deep systemic issues.

—Jean Shia

Head of Portfolio and Investment
The Autodesk Foundation



Jean Shia, Head of Portfolio & Investment, The Autodesk Foundation

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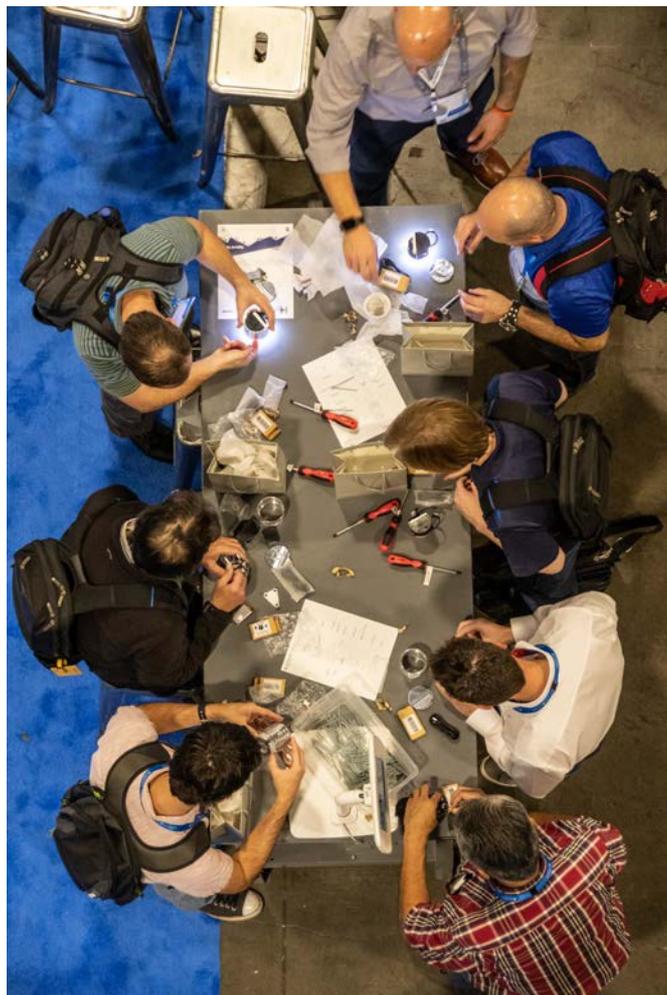
Head of Portfolio and Investment
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Introduction

In this report, we focus on the question of *how* innovators and entrepreneurs can unlock opportunities for people hard-hit by automation and globalization. We highlight the role that new ventures can play in tackling the impact of previous waves of automation and globalization, and in adapting to future changes. Our aim is not to advocate for any specific solution(s), but to discuss *what kind of approach* is needed.

This report is relevant to individuals and organizations who are committed to helping people to adapt to, and thrive in, the future employment market. It is primarily targeted at innovators, but its content and recommendations are applicable to all those working in policy, impact investment and philanthropy, research, education and training, charities, corporates, entrepreneurship, and beyond who have an interest in this mission.

This report stems from a collaborative programme of work between [Zinc](#), who run a U.K. venture-builder for mission-driven entrepreneurs, and the [Autodesk Foundation](#), a U.S. foundation that supports the design and creation of innovative solutions to the world's most pressing social and environmental challenges. Commissioned and funded by the Autodesk Foundation, this report provides a summary of Zinc's perspective and learning, generated through research, experimentation, and the input of our of experts, collaborators and partners. Much of the content is applicable across geographical contexts; however, it draws primarily on data and examples from the U.K. and North America.



Key Points and Recommendations

We begin the report by describing the importance and urgency of the challenge, highlighting (i) the potential for forces of automation and globalization to bring both positive and negative change, and (ii) the inequality of opportunities that exist between people and places, which are likely to be exacerbated by future waves of automation and globalization. We then describe Zinc's perspective and learning on how to approach this agenda, structured around a set of four key points:

01

We need to spend less time trying to predict an uncertain future. History has taught us that our predictions about the future are often wrong. In approaching the complex set of challenges around the future of work, we need to move beyond predictions and forecasts.

02

We need to focus on what workers want from work. Automation and globalization involve trade-offs and competition between capital and labor, and between consumers and labor. Economic policies have been skewed to the needs of consumers, often at the expense of workers' needs and wellbeing. Supporting people who have been, and are likely to be, hard-hit by automation and globalization means refocusing on workers: creating opportunities that are meaningfully centered on what workers want and need from their jobs in the future.

03

We need to understand workers' thoughts, feelings and behaviors to help them to adapt successfully. Creating the right types of opportunities is important and necessary—but it will not be enough. Given the pace and frequency of change, we need to ensure that people have the skills and will to embrace the associated opportunities. We can draw on the behavioral sciences to understand how to support people through change, focusing on their awareness, self-efficacy, resilience, adaptability, and self-identities.

04

We need to embrace experimentation. Relying on necessary 'top-down' solutions from governments poses a number of risks and challenges—including the possibility that such solutions will not engage their target group(s). In designing and testing new solutions, humility, inclusivity and experimentation are key in supporting individuals to achieve their goals. And we should be prepared for uncertainty and failure, which characterize most new innovations—and which can gradually lead us to impactful solutions.

Next Steps

Zinc will be continuing its work on this agenda – supporting our existing ventures and running new venture-builder programmes with this mission as the focus. We have seen, over the past few years, the power of missions to unlock new ecosystems of passionate individuals and organizations - brought together across national, disciplinary and sectoral boundaries. If you are motivated by this agenda and want to collaborate, contribute, or find out more, you can reach out via [our website](#).

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AUTOMATION & GLOBALIZATION

The Importance and Urgency of the Challenge

The importance and urgency of the challenge

Automation and globalization are two of the biggest forces shaping the future of work and our wider society. Work has been changing radically and regularly for centuries.

Over the last 200 years, forces of automation and globalization have brought remarkable gains to the developed world. Automation has transformed what people can produce in agriculture, manufacturing and services, giving consumers more goods and workers more income. Globalization has enabled more and more countries to trade and compete their way to greater wealth, based on specialization and exchange in ever bigger markets. Through these gains in productivity and trade, automation and globalization have increased the average wealth and health of workers in the long run. At the same time, clearly, they have negatively impacted many people, communities and places.

Reversals of fortune and inequalities of opportunity

Over the last 40 years, some people and places have done well out of automation and globalization (e.g. workers with college degrees and/or in the so-called ‘magnet cities’ and/or in the high value financial, creative and technology sectors), while some two-thirds of workers have fared badly. The growth of good jobs has largely been in industries for which higher educational attainment is required. In spite of a growing economy, many workers’ real wages have stagnated, their career opportunities have been curtailed and their bargaining power has been diminished. And this is not just about wage levels, but also job satisfaction. Polls regularly show that 60% of workers are either “not engaged” in their job or are “actively disengaged” from it¹.



Creative destruction is often a necessary part of economic growth, eradicating old ways of doing things and creating new ones. The problem lies in the distribution of opportunities and benefits during these times of flux. For many workers, what has been created is less attractive than what was destroyed. Whilst the numbers of people in employment have been at record highs, there has been a decline in the quality of jobs for many people—and marginalized groups (e.g. individuals at the intersection of inequalities based on gender, race and/or class) have often been hardest-hit by these changes².

There have been major reversals in fortune between places, and striking geographical inequalities of opportunity. In the U.S., much research has investigated ‘concentrated poverty’, and its impact on a range of educational, crime, health and employment outcomes. A report from the Brookings Institute and the Federal Reserve³ describes, through a series of case studies, the impacts of structural factors like deindustrialization on employment. Milwaukee’s Northwest neighborhood, for example, where the population declined by more than one-third between 1970 and 2000, experiences significantly worse educational achievement outcomes than the school district as a whole. In the U.K., boys in hard-hit areas will live a decade less than those in the opportunity-rich areas⁴.



Large swathes of old industrial areas in North America and Europe have been left behind. For example, Flint, Michigan went from being the richest U.S. city in 1970 to the poorest today, as its automobile factories closed. The high-profile regeneration of some old industrial cities (e.g. Pittsburgh, Manchester) has failed to create opportunities for and/or to engage the majority of their populations. So, we are not starting from an even footing.

These decades of changes have had a major scarring effect on many people and places, making it harder for people to adapt. We see this in high levels of mental and physical ill-health, lower economic activity rates, and declining social capital in many of these places. The gap in health outcomes between the North and South of England, for example, has continued to widen; life expectancy is two years less in the North for both men and women, and its health outcomes tend to be worse than those in other areas of England with similar poverty levels⁵. The U.K. has been described as the “most regionally unequal country in the developed world”⁶. Concerns are growing that the COVID-19 crisis is likely to exacerbate these inequalities, as vulnerable regions experience high levels of job losses, compounding existing higher unemployment rates⁷.

These scarring effects are particularly worrying in thinking about future changes, given that these same places appear to be the most vulnerable to the next, immediate waves of automation and globalization—given their economic structures and vulnerabilities. The types of jobs created in these places in recent decades have largely been in sectors that are continuing to be rapidly impacted by automation (such as retail, call centers, warehousing, etc.). So, the need to unlock new opportunities for people in these places, including supporting their resilience and wellbeing, is urgent. Solutions need to not only account for future waves of change, but in many cases also tackle current, ‘live’ problems and reduce existing inequalities. This is a complex and challenging agenda.

In the next sections, we discuss how innovators and entrepreneurs might approach this mission, with examples of the role they can play in tackling problems and creating new opportunities.

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AUTOMATION & GLOBALIZATION

How to Approach the Challenge

01

We need to spend less time trying to predict an uncertain future

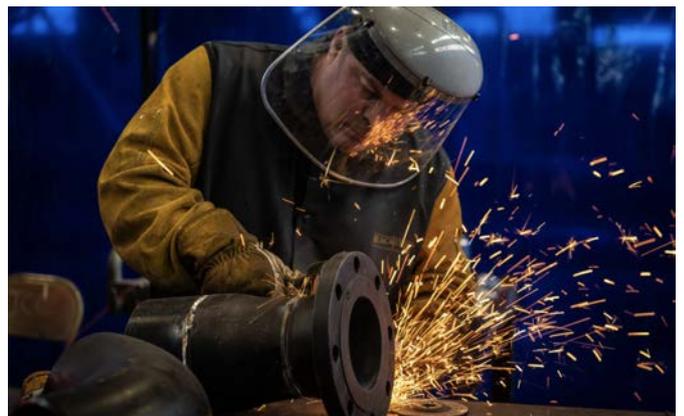
In approaching the complex set of challenges around the future of work, we need to move beyond predictions and forecasts.

History shows that it is hard to predict how economic and social changes will play out, and even harder to identify specific solutions that will be desirable, feasible or viable. A hundred years ago, 40% of the American workforce was employed in agriculture. Today, it accounts for less than 2%⁸. Manufacturing went from employing over a third of Americans in 1910 to less than 9% in 2015⁹.

Institutional predictions that disruptive advances in artificial intelligence, machine learning, and automation would drive mass unemployment have been overstated¹⁰ and there has not been a lot of convincing evidence to suggest that robots are reducing the share of lower-skill workers across Europe¹¹. Many economists now estimate the demographic effects on the labor market to be 53% larger than effects of automation¹² and the impact of ageing populations to outpace the shifts driven by technology. Researchers at Stanford highlight demographic shifts, not artificial intelligence, as the cause of the biggest challenges for today's workplace¹³. Decades ago, people would have guessed the future wrong.

And yet, much of the “future of work” debate is dominated by commentators trying to predict and plan the future. A range of reports claim to know which jobs will be affected, by what and by when. Many go on to suggest top-down solutions to solve the problems they predict.

While top-down solutions (e.g. regulatory, tax and benefit policies to support adjustment in the economy) are necessary and important, we see value in moving beyond predictions and forecasts—refocusing our attention on workers.



“Researchers at Stanford highlight demographic shifts, not artificial intelligence, as the cause of the biggest challenges for today's workplace.¹³”

02

We need to focus on what workers want from work

Supporting people who have been, and are likely to be, hard-hit by automation and globalization means creating opportunities that are meaningfully centered on what workers want and need.

At the heart of automation and globalization are trade-offs and competition between capital and labor, and between consumers and labor. Automation has made it easier for capital to substitute machines for workers. Globalization has made it easier for capital to substitute workers in cheaper locations for those in higher-cost places. Economic policies have been skewed to the needs of consumers, often at the expense of workers—and ignoring the lives of those consumers as workers. Innovators have competed to give consumers competitively cheap and convenient products, irrespective of the implications for the workers.

Both policymakers and innovators need to rebalance their focus, to give greater attention to what workers want and need from their work in the future, and what is likely to get in the way.

What do workers want and need from their jobs?

Creating opportunities for people is not just about increasing the number or availability of jobs; it is about understanding and designing good *quality* jobs. Job quality is important for workers' health and wellbeing, and is also important for the labor market (e.g. through its effects on retention, motivation, unemployment, etc.¹⁴). The explosion of the services sector, for example, following previous waves of automation and globalization has driven compromises in the desirability of available work, with a polarization between high-quality knowledge-based jobs (predominantly for those with a university education) and lower-skilled jobs in the 'convenience economy' that are much less fulfilling and desirable.



“Creating opportunities for people is not just about increasing the number or availability of jobs; it is about understanding and designing good quality jobs.”



Job satisfaction and job quality are among the most studied constructs in organizational psychology and other fields. While the characteristics of a ‘good job’ vary across people and time, numerous frameworks¹⁵ have attempted to capture common dimensions of job satisfaction. Drawing on the available evidence, there are a number of specific characteristics that form the basis of Zinc’s design criteria for ‘good jobs’ (see right column).

Beyond *how* work is structured, we know that *where* it takes place matters a lot. While vibrant labor markets in larger cities are often a ‘pull’ factor, there are also often high barriers to moving (e.g. housing prices in larger cities). Pawel Adrjan from the Indeed Hiring Lab, and Elena Magrini from the Centre for Cities, have been analyzing job searches on the *Indeed* job site. These data highlight the popularity of searching by location, while leaving the ‘type of role’ option blank. These searches typically account for around one-fifth of all job seeking activity on the site, but increased to 28% after the pandemic started. The implication is that there is strong motivation, among many workers, to find ‘any’ job, particularly where competition for jobs is high.

Zinc Fellow Dr. Paul Goldsmith, a neurologist and life sciences entrepreneur, highlights how virtual networks can temper the flow of people and capital to tech centers like Silicon Valley and the Golden Triangle. Dr. Goldsmith says we can be inspired from healthcare examples such as the Mayo Clinic which established satellites in areas remote from its original Rochester base. Universities can lower barriers to mobility by creating similar remote outreach, whether through physical infrastructure or digitally, and act as convergence centers for innovation. The result of such ‘Institution@ new geography’ is positive externalities and spillover effects in hard-hit places, where people would have otherwise had to leave.

Zinc’s design criteria for ‘good jobs’

Earnings

While pay level is only marginally related to job satisfaction¹⁶, pay is important—especially at the lower end of the salary range. Research has estimated that it is at around \$60,000 – \$75,000 where ‘satiation’ occurs for emotional well-being¹⁷.

Hours and Flexibility

Temporal and locational flexibility can provide workers with more control over their work/life balance, and tend to be associated with greater job satisfaction¹⁸.

Stability and Security

Security from job loss has been linked to job satisfaction, with contract type a widely investigated determinant, particularly in economic uncertainty¹⁹.

Future prospects, opportunities for progression and advancement

Opportunities for progression, development and growth are highly valued by workers.

Intrinsic qualities of the work itself

The Job Characteristics Model²⁰ predicts that job satisfaction is affected by five job characteristics (skill variety, task identity, task significance, autonomy, and feedback) through three psychological states (experienced meaningfulness, experienced responsibility, and knowledge of results).

Interpersonal relations

Workplace social support and relationships with colleagues have been found to be important for job satisfaction, and can also be beneficial in helping workers to manage workplace stressors²¹.

Have workforce trends reflected ‘good quality’ jobs?

It is clear that workforce trends, including increases in temporary and agency work, and the rise of the gig economy, have not always created jobs that meet the types of criteria set out above. There has been a polarization between wealth creation and job creation, with a small number of well-remunerated jobs (e.g. in the technology sector) created alongside a large number of underpaid and unsatisfying ‘lower skill’ jobs.

Big technology companies are contributing more to country GDP than ever, but haven’t necessarily been adding their share in ‘good’ jobs. Many of the jobs being created by the tech sector are unfulfilling and offer limited opportunities for progression/growth, as highlighted by Julien Corneise, Honorary Associate Professor at University College London. Calling technology a ‘magnifier of human forces’, he emphasizes how, in the design of technology and associated jobs, creators should always question who benefits and who is missed. This can be clearly seen in the rise of the gig economy and the hollowing-out of traditionally good, stable jobs that have opportunities for growth.

Tech innovations have brought about a level of convenience, often at minimal cost, to consumers—but at the expense of workers (e.g. those working jobs in delivery, warehousing, driving, etc.). This has resulted in extraordinarily well-remunerated roles, alongside roles that are exploitative. Under-valued roles include those in essential occupations such as care. Zinc Fellow Mike Hawking from the Joseph Rowntree Foundation (JRF) summarized this dichotomy as “a problem for employment policy, not just economic policy”.

The gig economy is not the enemy—flexibility, as discussed above, can bring a range of positive outcomes to workers. And technology can have a key role to play in enhancing opportunities—circumventing conventionally capital-intensive expenses and placing power, autonomy and capital back in the hands of individuals. For example, one Zinc venture, Sook, is looking to regenerate the high street by providing tech-enabled, flexible fit-out spaces for retailers. Their pop-up spaces are accessible and affordable, allowing small vendors to have a high street presence, without needing to use it seven days a week.



Creating ‘Good Jobs’ The example of agency work

The last decade has also seen a rise in agency work; the agency worker population in the U.K. has grown at an annual rate of 4-5%, reflecting over 1.5 million British temporary workers as of 2020²⁴. These sectors are dominated by workers in lower-wage occupations, who are often subject to external ebbs and flows of demand for their labor. Blue-collar agency workers in sectors such as process, plant and machinery operations make up about 40% of the agency population in the U.K.²⁵, and are often overlooked.

This is particularly evident in care-work—a sector that will continue to face major challenges if employers aren’t able to attract and retain people to jobs. The pandemic unearthed a dire dependency and demand for agency workers in the care sector, which already had pre-existing staff shortages of 122,000 vacancies in the U.K.²⁶. Organizational learning research establishes that team psychological safety (a shared belief among a team that the team is ‘safe’ for interpersonal risk taking) and team efficacy impact on learning and performance in work teams²⁷. Yet, much of the care industry is underpinned by precarious, often zero-hour contracts that are driven by a transactional ‘time and task’ structure. Home care work has become isolated (lacking in team structure), insecure and poorly remunerated.

Two Zinc Founders, Dr Trudie Fell and Violaine Pierre, saw an opportunity to reimagine in-home care after being inspired by the Dutch Buurtzorg ‘neighborhood’ model of working—circles of care teams that do more, not less, to support the wellbeing of clients. Their company, Zinc venture **BelleVie**, is certified as a living wage employer and a good example of how and why prioritizing the creation of ‘good’ jobs can be a commitment from the outset.

BelleVie uses a high-touch, human-centered approach to social care that prioritizes the experience of the worker.
Read more [here](#).

The benefits of flexibility and technological innovation are distributed unevenly. Lower-wage, temporary contracts can increase anxiety, reduce morale, limit the ability to learn, and ultimately reduce worker productivity²². The consequences impact the overall economy: JRF’s research identified a root cause of weak national productivity to be the nature of work on offer to those in low-wage sectors²³. This can be particularly problematic in recruiting for frontline and essential jobs, many of which have been atomized into unattractive, task-based contract roles.

03

We need to understand workers' thoughts, feelings and behaviors to help them to adapt successfully

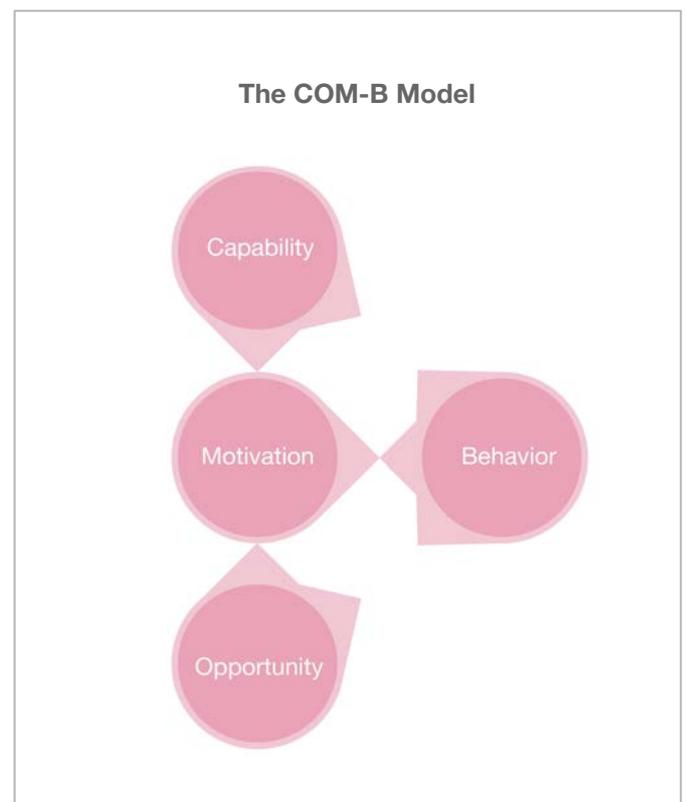
In addition to creating the right types of opportunities, we can draw on the behavioral sciences to understand how to support people through change, focusing on their awareness, self-efficacy, resilience, adaptability, and self-identities.

Much of the focus, in conversations about preparing individuals for the future of work, has centered on retraining and skills development. However, it is clear that this is only one piece of the puzzle. Expansion of public or private employment services, retraining opportunities, and investment in supporting technologies are impactful only to the extent that there is a population receptive to, and engaged with, the need for significant job transitions.

Complex societal problems can often be defined in behavioral terms—we need a range of people to *do things differently*. The behavioral sciences literature offers tools and methods that can help with this.

Theory-based models like COM-B and the Behavior Change Wheel (Michie, et al., 2011²⁸), for example, offer innovators an evidence-based framework for understanding problems and developing solutions. The COM-B model posits that, for any behavior to change, the target group needs to have the capability (e.g. knowledge, skills), motivation (e.g. beliefs, emotions) and opportunities (e.g. social norms, resources).

It is clear from the behavioral sciences literature that creating the right conditions/opportunities for workers is *necessary but not sufficient*. Given the pace and frequency of change that is likely to continue in the coming decades, we need to move away from an 'if you build it, they will come' mentality, instead ensuring that people are adaptable and resilient to these changes, and that they have the skills and will to embrace the associated opportunities.



Michie, et al., 2011²⁸

Recognizing the need to adapt, change, or retrain

We need to find ways of proactively engaging people—particularly lower-wage and/or lower-skill workers—around the importance and urgency of change. Workers need an entry point²⁹ to engage with any form of reskilling or upskilling (e.g. in digital literacy), and we cannot assume that they will actively be seeking these out in the places we might think. For example, there is data to indicate that up to 80% of adults in the U.S. are not aware of massive open online courses³⁰.

This relates to a point highlighted by Zinc’s Dr Lorenz Fischer, founder of Yuno—an app matching blue-collar workers with in-demand occupations. In researching his target market, he asked taxi drivers about the factors that would impact on their search for a different job. He found, despite an awareness of oncoming waves of automation (e.g. through newspaper headlines), interviewees didn’t tend to map changes back to their own reality. Their perception of a long “horizon of change” made the trends they were reading about intangible and incongruous to their day-to-day lives. This is clearly a challenge to overcome - the most sophisticated occupational matching algorithm cannot have an impact if workers do not perceive a need for change, or see an entry-point. Yuno is now working with the Department of Work and Pensions in the U.K. to reimagine the role of career coaches in the job seeking process. Reaching individuals has proven to be a difficult undertaking due to the stigma and shame associated with unemployment. There are concerns that this will be exacerbated by the economic fallout of COVID-19, which has driven global unemployment and under-employment levels beyond that of the Great Recession, impacting the jobs of up to 200 million people worldwide³¹. In response, the U.S. and U.K. governments have invested \$1 billion and £200 million, respectively, in employment and retraining initiatives.



“ Workers need an entry point to engage with any form of reskilling or upskilling (e.g. in digital literacy), and we cannot assume that they will actively be seeking these out in the places we might think.”

Building self-efficacy and resilience

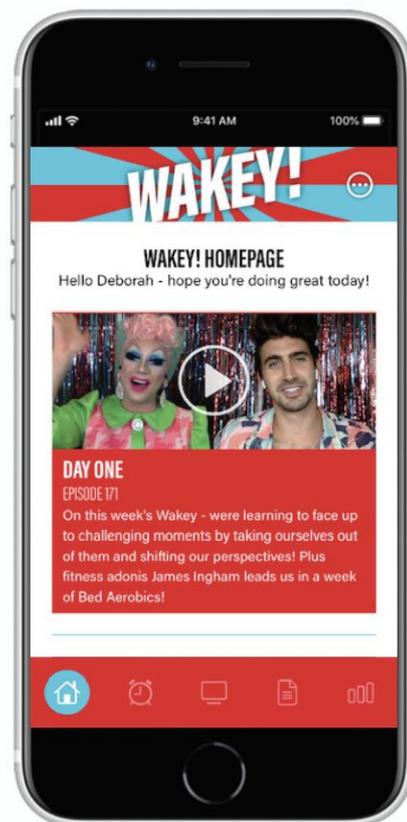
In addition to having an awareness of the need for change, individuals also need to believe that they can succeed. Having high self-efficacy³², as well as resilience, coping skills, and good mental health and wellbeing more generally, have been widely acknowledged as key in determining the extent to which we will be able to adapt to, and benefit from, oncoming trends around the future of work.

During early research for her product Wakey!, a breakfast show delivered on users' phones designed to improve a range of mental health outcomes, Zinc Founder Deborah Coughlin spoke with members of a working-class men's club about mental health. On being asked to make top-of-mind associations with the term 'mental health', they named organizations that focus on addiction, like Alcoholics Anonymous, and those that focus on changing specific health behaviors, like Weight Watchers. Deborah recognized a need to engage people from less affluent backgrounds with their mental health and wellbeing in ways that were accessible, engaging, entertaining, and non-clinical. Wakey!'s recent 12-week feasibility study on mental health and resilience validated the potential for an entertaining breakfast show format to engage people in a way that digital health apps often fail to do. Users reported improvement in their mood, having a steadier routine, and finding it easier to get out of bed in the mornings³³.

Focusing on transferability and adaptability, rather than specific skill sets

A large amount of 'retraining' focus has been on the development of highly specialized, digital capabilities. This is potentially problematic, since specific digital skills (e.g. learning a specific programming language), while essential, are prone to change and obsolescence.

Educational consultant and Zinc Fellow Kristen Weatherby highlights how root skills like problem-solving are fundamental to mastering digital skills. "Algorithmic thinking," she says, is about "process and iteration—you can start teaching small children about computational thinking and how to understand how algorithms work at a really young age, without any technology at all."



Wakey! creates science-driven mental health content and communicates it through an entertaining breakfast show. Read more [here](#).

“Zinc Fellow Kristen Weatherby highlights how root skills like problem-solving are fundamental to mastering digital skills.”

Using a similar philosophy, Zinc venture Game Academy is on a mission to use skills demonstrated in video games, such as decision-making, problem-solving, teamwork, communication, and perseverance, as initial, generalizable indicators of occupational fit.

Olivier Crouzet, Head of Pedagogy at 42 and Zinc Fellow, has spent over ten years training people in France in programming skills, and recognizes the tendency to over-index on technical abilities, at the expense of more universal problem-solving skills; “We are encouraging employers to think beyond needing (for example) just Java skills but rather the computational thinking skills to solve the problem, where Java happens to be the tool”. 42 is tuition-free, has no teachers and doesn’t hold any classes. Their unique peer-to-peer education model uses the cognitive theory of social constructivism, which suggests learning happens firstly between people (inter-psychological), then within the learner (intrapyschological) as they interpret new information through a filter of their own memories and experiences³⁴. The student experience at 42 is based on intensive, continuous interactivity and iteration based on a series of challenges that students collaboratively solve.

École 42 is a free coding academy founded in Paris with a network of locations globally. Read more [here](#).

Currently, 44% of the adult population in Europe have low levels or no digital skills³⁵. By considering innovative models that don’t require lengthy investments in time and capital, policymakers, educators, and employers can help build requisite skills in hard-hit places.



Changing professional identities The example of masculinity

Decades of research highlights the devastating impact of job loss—not just on income and financial stability, but on identity and purpose. In the aftermath of factories closing across the U.S., particularly in the so-called ‘rust belt’, with unionized, stable work being outsourced overseas, blue-collar workers encountered a range of emotional consequences. One clear example of this is the impact on men’s identities³⁶, particularly on different kinds of masculinities, amid a growth in lower-wage, service-sector jobs. Research has also highlighted the likely impact of oncoming waves of automation (e.g. connected and autonomous trucks and other heavy goods vehicles) for various aspects of masculinity³⁷.

The role of work on personal and professional identities is an important and often under-explored area. For many people, embracing new job opportunities will require substantial shifts in how they see themselves, and their role within various societal structures.

Dadly Does It is a project supporting fathers working with other fathers in post-industrial areas to overcome challenges faced by men and their families, including social isolation and building positive networks. Read more [here](#).

We need to embrace experimentation

In designing and testing new solutions, humility, inclusivity and experimentation are key in supporting individuals to achieve their goals.

Some of the solutions to this challenging agenda will necessarily be top-down actions from governments, such as national minimum wages and international trade agreements. However, when it comes to helping workers to adapt to the impacts of automation and globalization, top-down solutions can also present challenges. There is a risk that elite groups make predictions, and develop solutions, based on a misunderstanding of other people's contexts and behaviors – and fail to engage or respond to the diverse and changing needs of the target groups. Innovators are well-placed to take a more bottom-up approach—to experiment their way to developing scalable and impactful solutions.

In approaching experimentation, innovators should recognize the value of designing with, rather than for, end-users. Empowering people to feel agency over their challenges and opportunities, and to co-design solutions, is particularly important in the context of automation and globalization. These are ongoing, powerful forces that will require workers to continue to adapt throughout their working lives, if they are to thrive in the future. Success will come by creating the right opportunities, but also through hundreds of millions of individual workers changing their behaviors to adapt to and shape their working lives.



Creating opportunities that are targeted at 'everyone' is unlikely to reach the people who need them most. There is a risk that innovators, designers and intervention developers rely on their own personal experience, beliefs or judgements in developing new solutions. This is linked to the so-called false consensus effect, whereby individuals overestimate the generalizability of their beliefs, values, characteristics, and behaviors. The design of the modern workplace, for example, largely overlooks women and primary caregivers, older adults, and many others. By designing inclusively with a specific target user group in mind, innovators and policymakers can create opportunities that are more accessible for a range of groups.

Zinc Fellow Professor Jeremy Myerson, Helen Hamlyn Chair of Design at the Royal College of Art, highlights the importance of design thinking and inclusive design—emphasizing that designing for people with specific needs or requirements is likely to result in more generally accessible and inclusive products. He underlines the importance of deep qualitative research with a small number of people as a way to “understand lived experience”. He urges funders, including venture capitalists, to look beyond typical quantitative proof-of-market metrics, and to give equal weight to the depth of enquiry.

One Zinc venture, Diaspo, who are providing older people with the opportunity to host cultural cooking classes for younger generations, have embraced inclusive design from the outset. Their digital platform enables older people to earn a livelihood in a way that is tailored to their needs and preferences. In the process, they're fueling a new model of internet-powered entrepreneurship.³⁸

Innovators can get creative in the methodologies they employ to understand lived experience, in order to design inclusively and accessibly. Researchers at the Cambridge Design Centre, for example, use empathy tools to augment their physical experience through technology, including virtual reality goggles that distort your vision (to simulate blindness) and robotics to simulate arthritis. The intention of these tools is to simulate cognitive experiences as closely as possible, in lieu of lived experiences.

Co-founders of Zinc venture Tandem—Alex Shapland Howes, Tat-Seng Chiam, and Huw McLeod—spent months immersing themselves among their target user groups in the early stages of developing their venture. They mapped the transportation gaps in Wellingborough and Thrapston, two towns in England. By engaging from the outset with transport users and providers in these smaller towns and cities, and building a deep understanding of their needs, behaviors and contexts, Tandem were able to pinpoint a specific unmet need: transportation challenges in getting to and from work. Their solution, a ridesharing platform that acts as a three-sided mobility marketplace, has a number of potential use cases and could provide value to a range of target groups—however, by starting with a specific user group in mind, Tandem have created something that is accessible and inclusive from the outset.

Tandem are tackling transport poverty in small towns and cities through a taxi-sharing service.
Read more [here](#).



“Diaspo provides older people with the opportunity to host cultural cooking classes for younger generations and have embraced inclusive design from the outset. Their digital platform enables older people to earn a livelihood in a way that is tailored to their needs and preferences. In the process, they're fueling a new model of internet-powered entrepreneurship.”

Conclusion

This report has summarized Zinc’s learning about both ‘what matters’ and ‘what works’ in innovations focused on the future of work. It has highlighted a number of points we consider to be key in understanding and tackling inequalities of opportunity and outcome for workers.

In many places, automation and globalization have contributed to significant economic growth—at least prior to the effects of the COVID-19 pandemic. However, the associated growth in ‘good’ jobs has been felt largely in industries requiring higher education or advanced vocational training qualifications. **Despite economic growth, many workers have seen the quality of their job opportunities curtailed, rather than advanced, by changes in the labor market.** Opportunities available to those without higher educational or advanced vocational qualifications have often narrowed in range and reduced in quality. For many people, what has been created is less attractive than what was destroyed.

The uneven distribution of opportunities to benefit from new labor markets and new ways of working is entrenching existing inequalities. For those left behind by new labor market opportunities, job satisfaction has slumped along with wages. The economic effects of the COVID-19 pandemic are expected to further entrench inequalities between regions, sectors and individuals. These effects are felt disproportionately in areas whose economic characteristics mean that they are already vulnerable to the next waves of automation and globalization.

Improving equality of opportunities and outcomes requires more than just increasing the number or availability of jobs. Changes in the nature and experience of work have been central to increases in individual, sectoral and regional inequalities. They can also be at the heart of reducing those inequalities and improving opportunities and outcomes. However, achieving this will require more than just providing more employment. Rather, it will require a combination of:

- Focusing on understanding what workers want from work
- Understanding workers’ thoughts, feelings and behaviors to help them become more adaptable and resilient to change
- Embracing experimentation in the ‘bottom-up’, inclusive design of new jobs and ways of working.

BelleVie

Rethinking the future of care work

In the UK, almost half of home care workers leave their jobs every year; vacancies are higher than the national average at 10% and increasing by a percentage point a year. Yet paid care jobs will have to increase [32% by 2035](#) to align with our ageing population—90% of whom would prefer to be cared for in their own homes.

According to market reports, average pay for social care jobs fell 2% in Q3 2019, with applications for these roles dropping by 8.9%. Employers across the social care industry are struggling to source talent. Local authorities are still the biggest funders of social care. It's a race to the bottom and the benchmark is too low.

It's widely acknowledged that the current 'time-and-task' model of delivering care is broken. Most care agencies are focused on the commodification of care provision—reducing expenses rather than adding value—and most startups in the space are trying to digitize a broken model. A model which leaves those being supported feeling like items on a tick list, not human beings, and drives employees away from what can be a fulfilling, meaningful career.

Creating in-demand, good jobs through inclusive design

In a survey BelleVie fielded with the National Association of Care and Support Workers (NACAS), of [over 600 care workers](#), BelleVie found that 80% of care workers had experienced or felt close to burnout during their career while only 1 in 2 respondents agreed their salaries were enough to cover bills and food.

Care work is inherently empathetic, social, and fundamentally human. It bears no surprise that only 8% of individuals are self-employed, and that care workers tend to prefer the camaraderie of working with coworkers. BelleVie's model is based on Wellbeing Support Workers working closely together in small, neighborhood-based teams of around 10 people.

Summary

By reinventing care based on the needs and wellbeing of the care workers, BelleVie have created a human-centered model that improves the lives of both carers and, as a result, the lives of the people they support.



Violaine Pierre and Dr Trudie Fell
Co-Founders
BelleVie

Whole selves to work

BelleVie encourages colleagues to bring their whole selves to work. They aim to create an environment where people feel free to fully express themselves, bringing unprecedented levels of energy, passion, and creativity to work. 70% of new colleagues are from a non-care background, bringing a wealth of different experiences with them. BelleVie recruits people based on their values and personalities, providing training and coaching in both care and self-management.

People first, tech enabled

To reinvent care based on the needs of people doing the work, BelleVie took inspiration from the successful Buurtzorg model which transformed community nursing in the Netherlands. They use organizational structures and management practices seen in [‘teal’](#) organizations. BelleVie’s systems are based on peer relationships, with power embedded through the organization, no longer tied to a few top leaders. Wellbeing Support Workers have high autonomy, making the day-to-day decisions on how to deliver the best care, and are accountable for coordinating with others. Teams plan their own schedules, covering colleagues’ holiday or sick leave. Teams are supported by Coaches, instead of Managers. The innovative practices are enabled by a bespoke suite of digital tools being developed iteratively, co-designed with Wellbeing Support Workers. The resulting “Wellbeing Operating System” will allow BelleVie to further transform the future of work further and extend its reach.

Subscription based revenue model that pays annual salaries

In another departure from the common zero-hour contract model, BelleVie, an accredited Living Wage employer (above government minimum wage) pays annual salaries with guaranteed hours to give care workers financial security. It’s about outcomes, not hours. The nearly 40% higher than average wages are enabled through a lean back office and use of tech tools. As BelleVie have effectively fixed their outgoings, they have introduced a new charging model using a monthly subscription. BelleVie are the only UK care provider to solely rely on this charging model.



Photo: BelleVie Wellbeing Support Worker visiting an older woman living with dementia.

How BelleVie tested and iterated the care worker occupation

BelleVie launched mid-2019 with one pioneer team in Oxfordshire which had grown to a Regional Circle of 5 Wellbeing Support Teams by early 2021. In November 2020, BelleVie launched a second regional Circle in the North East—where unemployment has traditionally been lower than average. As a stepping stone to becoming a national brand, BelleVie wants to prove that their model can work in two distinct geographies.

Summary and future

In summary, BelleVie is setting out to transform the future of care work, shining a spotlight on the value placed on it and creating a new vision of care that is characterized by accessibility, trusted relationships, and worker wellbeing. In terms of the future of work, there will be no shortage of jobs in adult care, due to increasing need (from demographic shifts), difficulties around its automation, and its necessarily local delivery models. The challenge will be to ensure that these new jobs create not just employment, but fulfilment; we need to see a triumph of quality, rather than quantity.

Wakey!

Improving wellbeing and resilience through ‘edutainment’

One of the most profound and scalable examples of education happened outside the classroom: Sesame Street was launched in 1969 to supplement preschool for disadvantaged children, educating audiences on core skills including vocabulary and good nutrition³⁹. Sesame Street’s appeal extended far beyond its originally intended audience and is acknowledged by educational experts as the “largest and least-costly early childhood intervention ever implemented in the United States”⁴⁰. In designing specifically for the needs of inner-city children, the creators of Sesame Street tapped into something universal.

Sesame St democratized pre-school education, and we think that the same approach can be used for mental health.

People in the lowest socioeconomic groups suffer from mental ill health at higher rates in comparison to those in the highest groups⁴¹. Also, those in lower socio-economic groups are more likely to be unemployed, working in jobs with low pay and insecure work, which have been found to be detrimental to mental health^{42,43}. There is a lack of mass-market solutions for these populations, with Calm and Headspace apps being inaccessible to most, costing \$300 and \$400 respectively in total lifetime value⁴⁴.

Who are we serving?

Applying the Sesame Street philosophy to adult mental health, the Wakey! App is an entertaining mental well-being platform, with a 9-minute edutainment show that speaks to the audience (using colloquial language paired with humor, hosted by a drag queen and a former Love Island contestant). While there is a strong emphasis on entertainment, the show’s content is theory and evidence led, drawing on approaches from cognitive and third-wave psychotherapies and positive psychology interventions.

Summary

Designing for underserved groups can lead to products that resonate with the mass market.

Focusing on engagement and entertainment, and being tech-enabled rather than tech-led, has created a user-centered product that weaves into people’s routines.



Deborah Coughlin

Founder and CEO, Method X Studios
(creators of Wakey!)

Our ambition is to create a 'go to' 24/7 gateway for mental health information and solutions that is accessible to everyone and will be a companion throughout their life, with all its highs and lows. We aim to increase access to wellbeing support to lower socioeconomic groups who have traditionally been excluded from the design and evaluation of digital mental health interventions. Most mental wellbeing apps are marketed to the top 10% of the U.K. population and even then, engagement is low—Wakey! is targeting the remaining 90% and is keeping the engagement high.

Characteristics of our persona, Olivia (age 35, Lives in NE England, annual household Income <£22k):

- Olivia doesn't self-identify as needing or wanting costly self-help or wellness products the way they are traditionally delivered. She searches for entertainment rather than instructions to regulate her emotions.
- Olivia operates a till at Asda and doesn't have a workplace email, so she can't take advantage of the wellbeing content provided by her employer
- Olivia's current struggle is getting up in the morning and sleeping in increases her anxiety levels

Insights from Experimentation

The dual strength and challenge of Wakey! is that we aren't a retraining company, and our users don't view us that way. The conversations on our platform are genuine and our users trust us to be a part of their daily lives. However, this also poses the challenge of reaching and engaging individuals that wouldn't normally self-select for mental health and wellbeing products.

After launching in January 2020, we had high retention up to 3 weeks and a low acquisition cost. We also successfully reached our target audience, with the top ten jobs of users including gig economy workers and low-paid insecure jobs. We carried out a 12-week study to assess the impact the show has on peoples' mental health. Of around 200 people who provided follow-up data, approximately 60% said it was easier to get out of bed, 50% saw an increase in life satisfaction and in feeling life being worthwhile, and 34% reported an increase in self-efficacy⁴⁵.

Although it presented challenges, there were new applications and adaptations of our product that emerged during the COVID-19 pandemic. We are currently in a rapid test cycle and will be launching a new solution in summer 2021.



Dadly Does It

Creating the conditions for positive fatherhood

At its peak, Salford, a city in Greater Manchester, was the third busiest port in Britain. For much of the early 1900s, men lined up for long, 12-hour shifts every morning. The hard work came with a sense of community, camaraderie, as well as trade unions protecting worker rights. Globalisation in the 1970s led to demand for larger container ships, and the docks closed in 1982 with the final loss of around 3,000 jobs⁴⁶.

Reviving a community or a local labour market is not as simple as dropping a new warehouse in its centre to create jobs. It involves creating an environment in which the people who live there can reimagine their own sense of purpose. The cumulative effect of history and shared values creates a shared identity and culture that can last for generations. This can pose a challenge in post-industrial areas, whether in Salford after its docks closed, in Lille after coal, mining and textile industries shut, or in south-east Chicago after the steel mills disappeared⁴⁷, where once-thriving industries played a central role in defining worth and purpose, especially for men in occupations that have been entirely displaced.

Dadly Does It

We started Dadly Does It seven years ago, originally to create an environment for men in Salford to redefine their role and sense of purpose in neighbourhoods facing economic and social challenges. We wanted to question and examine how traditional nuclear family cultures were limiting positive, constructive personal well-being for men and their families. While high-quality employment was one ideal outcome, we did not view inserting the men into jobs as the purpose of our work.

Summary

The changing nature of work can mean a challenging shift in identities and culture. Using positive deviance and a user-centred approach, Dadly Does It has supported men to redefine their role and sense of purpose in neighbourhoods facing economic and social challenges.



Chris Dabbs
Chief Executive
Unlimited Potential

Through Dadly Does It, we found that there were still persistent stereotypes about men and what constituted feminine versus masculine work. Men felt out of place in traditional facilities for children and families, which tend to employ women almost exclusively. Instead, we decided to meet in environments familiar and comfortable for the men, such as a local café for fry-ups (breakfast). We learned that being a good dad is not a whole solution, but it gave men a valued purpose and connected them with others in a positive way. Rather than us prescribing solutions, each community of fathers started to support one another on positive fatherhood and wider wellness, including connections to employment. Their primary motivation was their love for their children, and wanting to be a good dad.

Positive deviance for community-based change

In each neighbourhood, Dadly Does It focused on ‘what’s strong, not what’s wrong’, and drew on the strengths, assets and hidden wisdom of communities. We used a strengths-based approach called positive deviance—finding positive ‘outliers’ on a normal distribution curve. Amongst the fathers, the positive ‘outliers’ were the ones willing to swallow their pride and speak up about their problems and share solutions father to father.

We did not break or change anything—the majority of solutions are already in the communities themselves. In contrast to the typical health or social care approach of identifying needs/problems and then providing services to address them, we look for where the solutions may lie within the community and create the conditions for them to take hold. There is no point in middle-class men or women charging in to teach working-class men the meaning of good fatherhood.



Photo: Participants in the Dadly Does It program.

Empirical benefits from the programme included:

- £1 invested yielded at least £2.25 of potential savings in children’s services alone
- £1 invested yielded approximately £14 of value for the core fathers involved

Our findings strongly suggest that improving the well-being of fathers from disadvantaged backgrounds can improve the well-being of their children. It also appears to have the potential to improve the quality of family relationships and to provide benefits to the well-being of partners and ex-partners, including through new or better-quality employment.

ÉCOLE 42

Teaching computational thinking and problem-solving

42 is a college-level, tuition-free, peer-to-peer software engineering school established in Paris with a growing network of 30 campuses around the world including Morocco, Finland, the Netherlands, Russia, Brazil, Armenia, Japan and Spain. The school was founded and funded by a famous French serial entrepreneur and billionaire in 2013 to democratize technical education based on a merit-based model.

Our philosophy and how it's changing

Coding is, and in some form always will be, a valuable skill. But it's not the only one that people can build to update their abilities for the digital economy.

Within our project-based modules, we apply Piaget and Vygotsky's theory of constructive socio-cognitive conflict. Counter to the traditional 'empty jar' approach to learning (which presumes the scholar's mind is a blank canvas that needs to be filled), social constructivism uses an approach of building knowledge through shared experience and interaction.⁴⁸

Traditional lectures and rote memorization live at the bottom levels of Bloom's taxonomy, a classic framework for depth of learning. At 42, our programs live at the top levels. Creating isn't only better for learning efficacy, it's also just a lot more fun.

On the surface, coding has been our focus; but at the heart of it, we're building a mindset. As we've expanded our school and taken feedback from employers, agility, adaptability and other fundamental soft skills are highlighted as the real need. Over time this has become our true goal: to teach students to learn on their own, to search, to fail and to experiment.

Summary

Rather than teaching highly specific, specialized technical skills, 42 focuses on an underlying framework of computational thinking that can be applied across disciplines and is resilient to obsolescence.



Olivier Crouzet
Head of Pedagogy
École 42

IT skills change rapidly and are prone to obsolescence

Computational thinking uses logic to solve and iterate on solutions to complex problems. Our goal is not to say that students are graduating with highly specific technical skills, but rather that they are able to problem-solve. For instance, we'll give students a database problem without specifying how or which technology to use. Students adapt their approach to use technologies that are appropriate to the specifics of the problem. We are advising employers that if they recruit for specific, specialized skills (such as Java), they're limiting themselves to technologies that will evolve within the next two to three years.

Within IT, we've come to expect and welcome constant change. But like technology, society is evolving at the same rate—agility should be part of the classic K12 education and built throughout our working lives.

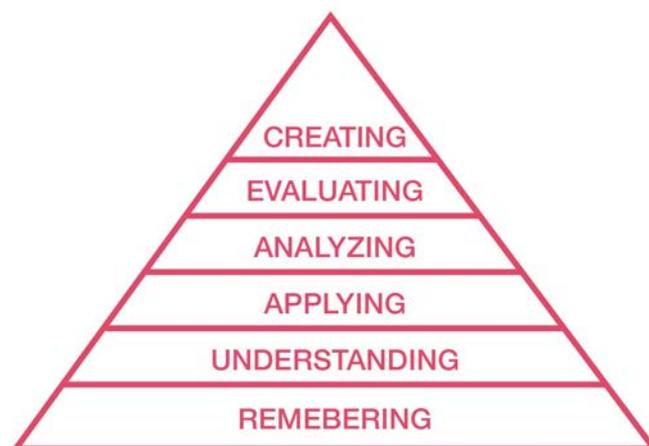
The unique conditions of France and our experiment with the Ministry of Education

Programmes like ours are able to succeed in France because we don't prioritize credentials as heavily as other countries. Many talented people are rejected from the elite system, and as a result, there are a number of widely respected options outside the 4-year undergraduate education framework.

We recently started an experiment with the French Ministry of Education to imagine what it would look like to apply 42's model in primary school. The design characteristics of our pilot experiment include:

- Using a scientific approach of trying and failing to build methodical habits to map actions and their outcomes.
- Teaching digital citizenship without specialized coding languages at the outset in order to build logic.
- Layer in coding skills afterwards as the supplement rather than the center.

Throughout this experience, students will try and will fail, over and over again. That's the point. Learning the trial-and-error process builds stamina, determination, and process skills that are necessary for adapting to uncertainty.



Traditional lectures and rote memorization live at the bottom levels of Bloom's taxonomy, a classic framework for depth of learning. At 42, programs live at the top levels. Creating isn't only better for learning efficacy, it's also a lot more fun.

“ Our goal is not to say that students are graduating with highly specific technical skills, but rather that they are able to problem-solve.”

Tandem

Transport poverty and temporary workers

As more employers start to prize the flexibility of a more temporary workforce, the Western world has seen a significant rise in agency and temporary work. Over the last decade, the agency worker population in the U.K. has grown at an annual rate of 4-5%, reflecting over 1.5 million British temporary workers as of 2020⁴⁹.

While policymakers may notice the types of temporary workers who inhabit their social circles (eg. freelance writers and coders), there are significant numbers of blue-collar agency workers who work in sectors such as process, plant and machinery operations who are often overlooked, but who make up about 40% of the agency population in the U.K.⁵⁰ These sectors are dominated by workers in lower-wage occupations, who are often subject to external ebbs and flows of demand for their labor, but without the corresponding financial buffer that their white-collar counterparts enjoy.

And these jobs are tough. They're often low pay, physically strenuous, and stressful, with difficult daily targets often meaning that for instance, warehouse workers may have to walk as much as 20 miles in a single shift. There are significant opportunities to upgrade the quality of these jobs, which includes tackling underlying conditions such as transport poverty, which is about the affordability and accessibility of transport, especially for more vulnerable groups.

Tandem was set up to eliminate such transport poverty. Tandem's first services enable innovative partnerships with existing local taxi and minibuss companies to create new transport options for underserved locations. Tandem launched a shared taxi service in Wellingborough in October 2019, enabling a large majority of its customer base to access roles they would otherwise have had no way of accessing.

Summary

Blue-collar agency workers account for almost half the agency population in the UK, and agency workers in turn are one of the fastest-growing portions of the labour force, whose needs should be reflected in future of work policy conversations.

Iterative user testing and pilots helped Tandem define fit-for-purpose transport service offerings, including recurring weekly rides and the ability to book for others—demonstrating gaps of mass-market solutions for under resourced areas.



Tat-Seng Chiam
Co-Founder
Tandem

Who are we serving?

As an example: Daniel is a 22-year-old from the town of Wellingborough in Northamptonshire. He left school at 16 with GCSE qualifications, and has since taken on a range of blue-collar roles in warehouses and factories, primarily staffed through agencies, which earn him close to the minimum wage of £8.72/hour. In a given week, he might be staffed from 8AM-4PM at an electronics retailer, the next week he might be staffed from 2-10PM at a clothing warehouse. Daniel takes pride in being able to earn a wage and perform hard work, especially during a period where lots of his peers have not been able to find employment opportunities. He might not necessarily want to stay in warehouse work forever, but his wage helps him contribute to his family's financial situation with whom he still lives and is very close to.

However, transport is a huge barrier to Daniel's ability to access work. Many of these factories and warehouses are located out of town and are poorly served by public transport, especially at the times that he would need to get there. His lower income makes it infeasible to own a car, and distances make cycling/walking to work infeasible, especially after finishing a physically exhausting shift, and where such modes of transport would involve navigating dual carriageways that are very unfriendly for pedestrians and cyclists. Daniel was one of Tandem's first customers, and we're pleased to support his ability to access employment. Because he just pays for his seat in the vehicle, he's able to regularly use our affordable and reliable service (in some months, up to 40 times).

Insights from experimentation

Through both our official service in Wellingborough and earlier pilots in locations such as Skelmersdale, we gained valuable insights that enable us to design our service to truly meet our users' unique needs. One example is that lots of our passengers want the ability to book recurring journeys for the entire week (in big cities, users of ridesharing services tend to use them for one-off occasions). Another valuable insight is that passengers may have financial/technical constraints (e.g. not everyone might have a smartphone). This led us to design functionality that enables individuals to book on behalf of others (e.g. an employment agency booking for their workers, or one friend booking for another).



Photo: Agency workers using Tandem's service in Wellingborough

From Tandem's first official site in Wellingborough in October 2019, we have: achieved 10x growth in gross revenue between 2019 and 2020; expanded the team from 3 co-founders to now 8 team members; worked with leading employers and employment agencies on shorter-term contracts or an ongoing basis (e.g. Royal Mail, as well as two of the world's largest employment agencies: Manpower and Reed). We have also secured >£600k in grants (including the UK's Department for Transport and the European Space Agency) and equity pre-seed financing (including from leading impact investors like Ascension Ventures and Sustainable Ventures).

New mobility solutions like Tandem are important, but ultimately only one part of the puzzle - whether that's new forms of job retraining (e.g. Lambda School) or new tools to smooth income volatility (e.g. Wagestream). Across the Western world, there are millions of Daniels who live in geographies and work in sectors rarely frequented by those with money and influence - it's time to figure out how we - social entrepreneurs, forward-thinking philanthropists and impact investors, and innovative governments - can best support them. The future of work may become increasingly more temporary, but the unequal conditions in which much of this work takes place should not become permanent.

Behind the report

Zinc

Zinc exists to build and scale a brand-new way to tackle important societal problems. We set out to:

- Unlock the impact of the frustrated talent that wants to solve these problems;
- Mobilise an ecosystem around missions to find problem-led solutions, uninhibited by sectoral or disciplinary boundaries;
- Build commercial products & services that consumers & businesses want to solve their own problems;
- Create a new approach to science-based innovation for early-stage businesses.

We run a full-time ‘venture-builder’ programme where a diverse cohort of entrepreneurs come together to create new commercial products and services from scratch. The entrepreneurs join pre-team and pre-idea and, through our programme, form teams and build scalable ventures that target millions of users, based on principles of user-centered design and drawing on the best scientific research. Zinc’s programmes are centered around four missions: improving mental and emotional health; unlocking opportunities for people in places hard-hit by globalization and automation; adding more years of high quality to later life; reducing the harm people do to the environment. Over the next four years, we will run 7 venture-builder programmes, bringing together 70 entrepreneurs in each 12-month program.

In 2018, Zinc ran a venture-builder programme focused on the mission of unlocking new opportunities for people in places hard-hit by globalization and automation. The mission attracted a talented cohort of aspiring and experienced entrepreneurs, as well as a diverse network of experts and partners. Working in communities across the U.K., Europe and North America, Zinc and our ventures have, over the last three years, identified and tackled widespread unmet needs that are often overlooked by mainstream narratives around the future of work. More details can be found [on our website](#).

The Autodesk Foundation

The Autodesk Foundation, the philanthropic arm of [Autodesk, Inc.](#), supports the design and creation of innovative solutions to the world’s most pressing challenges. The Autodesk Foundation provides risk-tolerant funding, technology, and talent to nonprofits and startups to help them maximize impact.

To scale promising solutions to climate change and inequality the Autodesk Foundation invests in three impact opportunity areas: energy and materials, health and resilience, and work and prosperity. To learn more, visit [autodesk.org](#).

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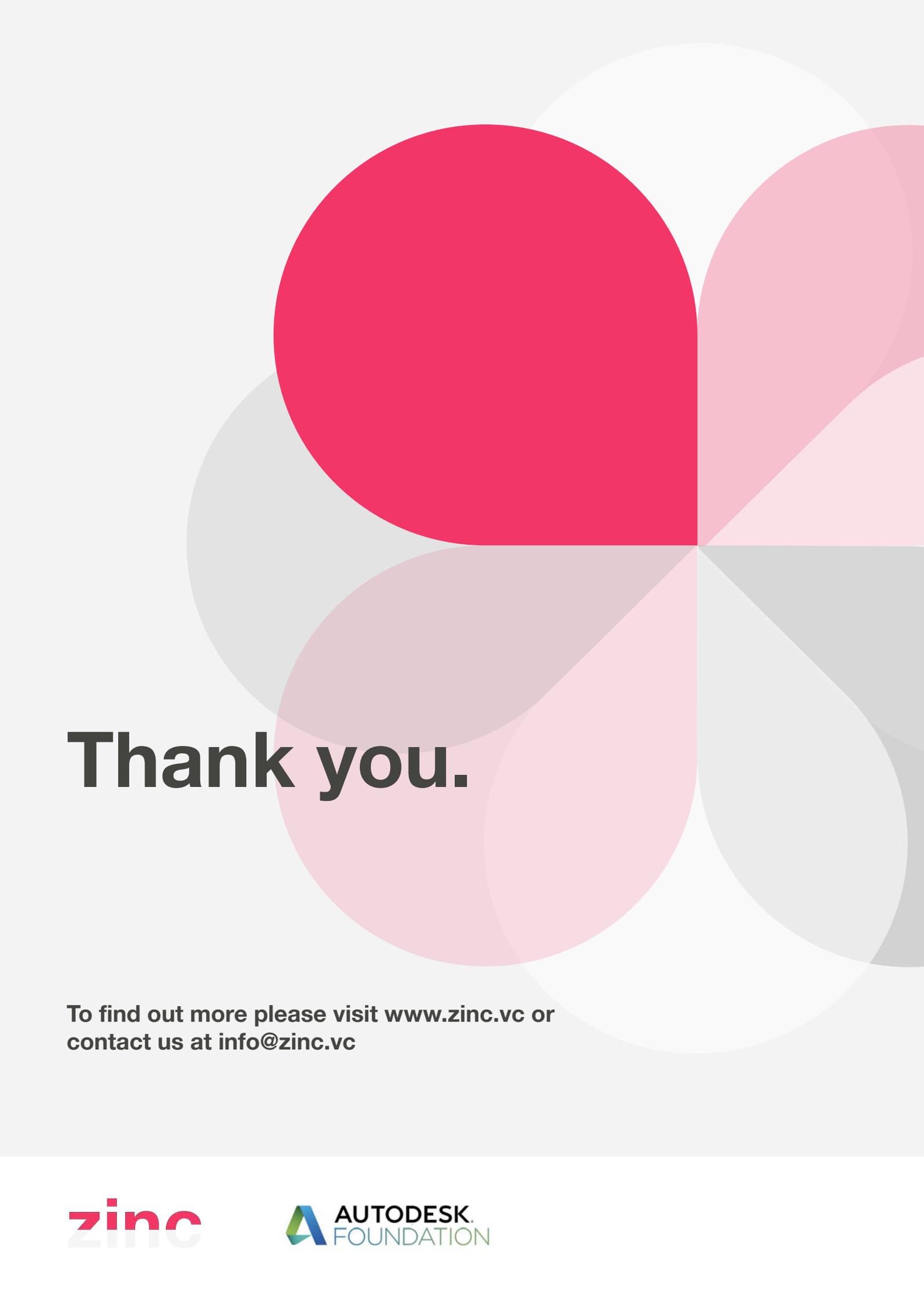
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