

accenture

RESKILLING

INDIA'S DISADVANTAGED WORKERS



**Thriving in
uncertain times**

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Introduction

India's workforce is facing two epochal transitions. By 2027, the country will have the world's largest workforce, with 1 billion people aged between 15 and 64 years.¹ At around the same time, digitization, automation and advances in artificial intelligence (AI) will disrupt the world of work. The kinds of skills required to thrive in that disrupted world will shift, with profound implications for workers, especially the marginalized ones.

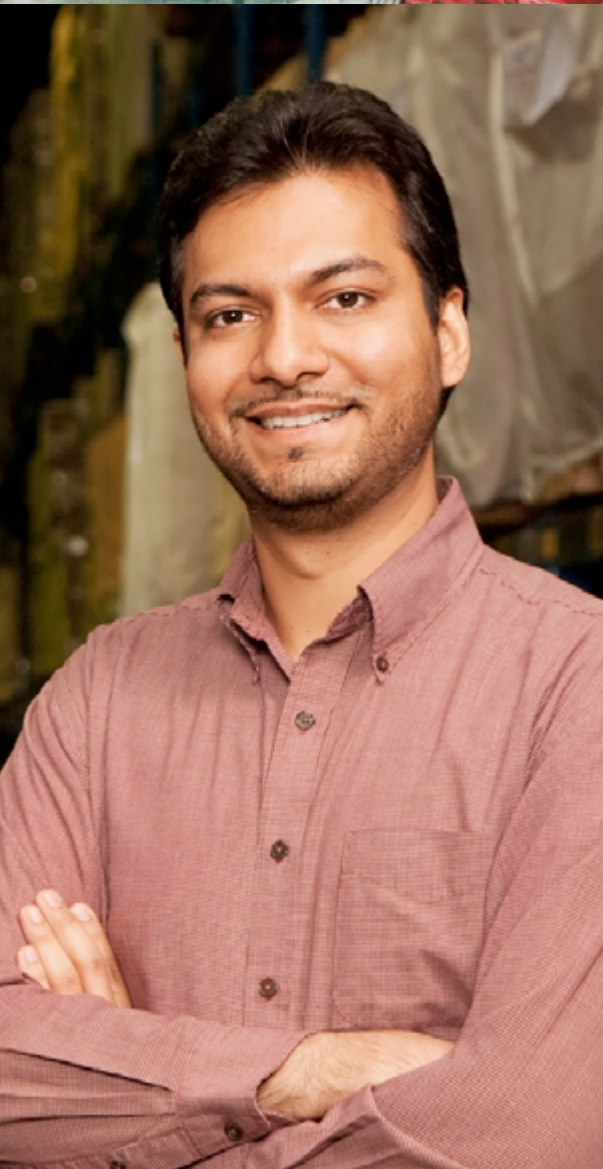
Our research shows that the collision of these two powerful forces will upend India's informal employment sector; the world of work will be dominated with apps and algorithms. But this transition will unfold at a time when the sector will have millions of vulnerable, marginalized workers – say, roughly four-fifths of the nation's total workforce. They face a “double disadvantage,” that is, lack of awareness of automation as well as the means to adapt to it.

Clearly, concerted efforts and innovative interventions are needed to enable these workers to break the vicious circle. They need to be able to access and afford the skills training required for better-paying jobs. Without that, many workers face the risk of falling behind or dropping off the radar altogether.





Our research homed in on five occupation groups—construction workers, handypersons, retail salespersons, hospitality staff and microentrepreneurs—from within the informal sector. We constructed a persona for each of the jobs. The selected groups are part of the low-skills group (agriculture, construction, retail trade and personal non-professional services), which account for 70 percent of the total jobs in the economy and contribute significantly to India’s gross domestic product.²



We made detailed observations on what a typical day for each of these professionals is like. We took into consideration the common challenges they face in their workplace and identified opportunities to improve their work lives and workspaces. Finally, we created an outlook of what their work could look like in 2025 with the integration of emerging technologies and digital platforms.

Trends in India's labor market



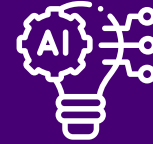
THE GIG ECONOMY EVOLUTION

For marginalized workers, platforms like UrbanClap, Housejoy and Gapoon could mean a paradigm shift in the nature of their employment - turning them into self-employed gig workers from wage earners. But first, they must have or **acquire the requisite skills** and aptitude to participate in the platform economy. Also, they must be protected from exploitation, given the lack of labor laws against “overwork and underpay” for such gig workers.³ India could follow in California's footsteps by legislating that gig workers be classified as regular workers and not independent contractors, according them full worker protection.⁴ Finding a balance between **promoting innovative businesses** and protecting worker rights will be a challenge for the government.



HYBRIDIZATION OF JOBS

A new generation of tools and resources is altering the nature of work, changing roles and making reskilling and upskilling the workforce the need of the hour. For almost every single role, a **combination of technical and soft skills is becoming essential**. The rise of hybrid jobs⁵ will further influence how skill development programs are framed, designed and delivered. Hybrid jobs combine skill sets that were not previously found in the same job. For example, programmers increasingly need design skills and marketers need analytics and statistical skills.⁶ Or take the example of construction workers who need an **understanding of digital tools** and technologies to work with intelligent machines and equipment which are increasingly being used at construction sites.



TECHNOLOGY AND HUMAN AUGMENTATION

Across sectors, new tools and technologies are helping augment human effort. At workplaces, machines and solutions built on digital technologies help workers do their **jobs faster and more effectively**. For example, AI-enabled devices help retail shop assistants gain real-time data on inventory, order and returns freeing them to have more informed conversations with clients.⁷ Beyond the workplace, they help improve the well-being of workers by **tracking hours of work, travel, sleep** and suggesting healthier habits and diets. Personal smart assistants help with scheduling needs while microlearning apps support upskill and reskill activities. Platforms and applications like this will help workers in their lifelong learning journey.

Reimagining key occupation groups

For a large workforce like that of India, it is crucial to identify occupation groups that are among the most **disadvantaged and require considerable attention**. In this study, we looked at five different occupation groups that not only form a significant part of the informal workforce, but also are most at **risk of being left behind in the growing digital economy**. We looked at the challenges they face with no formal skills training, and their vulnerability to new tools and technologies. The selected groups are representative of the broader demographic of disadvantaged or marginalized workers.



Handypersons

This is a varied group undertaking tasks as varied as plumbing, carpentry, and electrical work. They lack formal skilling but learn on the job, often from family members.



Housekeeping staff

The travel and tourism sector in India accounted for 8 percent of total employment in 2017, employing around 41.6 million people in that year.¹⁰ It continues to be an attractive option for young men and women looking for their first job after completing or dropping out of high school.



Salespersons

The retail sector is a crucial employer of young people who leave the education system before graduation. Low barriers to entry in terms of skill requirements and relatively consistent income make the retail floor an attractive option.



Microentrepreneurs

The micro, small, and medium enterprises sector is India's second-largest employer after agriculture, creating more than a million jobs each year.¹¹ However, these enterprises struggle with lack of access to credit, modern technology, and required skills.¹² This sector is particularly attractive for women and self-help groups for flexible location and work hours.



Construction workers

The construction sector, which mostly relies on unorganized labor, is among India's biggest job providers.⁸ Circular migrant workers, who never settle down at work destinations, are the most impoverished sections of the Indian workforce. Often exploited by contractors; they have little or no access to social welfare programs.⁹

Handyperson

ELECTRICIAN IN A METROPOLITAN CITY



Age: 25–35 years

Life situation: Married with kids, a migrant finding it difficult to make ends meet in the city

Education: 10th grade

Skills: No formal skilling, learns on the job. Keen desire to learn, but unsure of what and where

Digital fluency: Comfortable with smartphones and apps, uses YouTube to figure out how to fix new appliances

Ahmed, 34, moved to Bengaluru from Assam about eight years ago. After completing tenth grade, he worked odd jobs in his home town. Given the limited prospects to make a living there, he moved to the city. Ahmed joined his relative who worked as a handyperson doing plumbing, carpentry, and electrical work with a construction contractor. Ahmed learned the different trades by observing his relative. Over time, he gained experience and confidence to work independently. He moved across different companies and contractors before settling down to work on one of the app-based home services platforms. He gets a steady stream of work assignments via the app throughout the day, traveling across the city.

With no formal skills training, Ahmed is unsure of his future. He is anxious about fulfilling the needs of his family, the lack of a social safety net, and his ability to work with new smart appliances and equipment. He wants to learn new skills and increase his earning potential but doesn't know how to go about it.

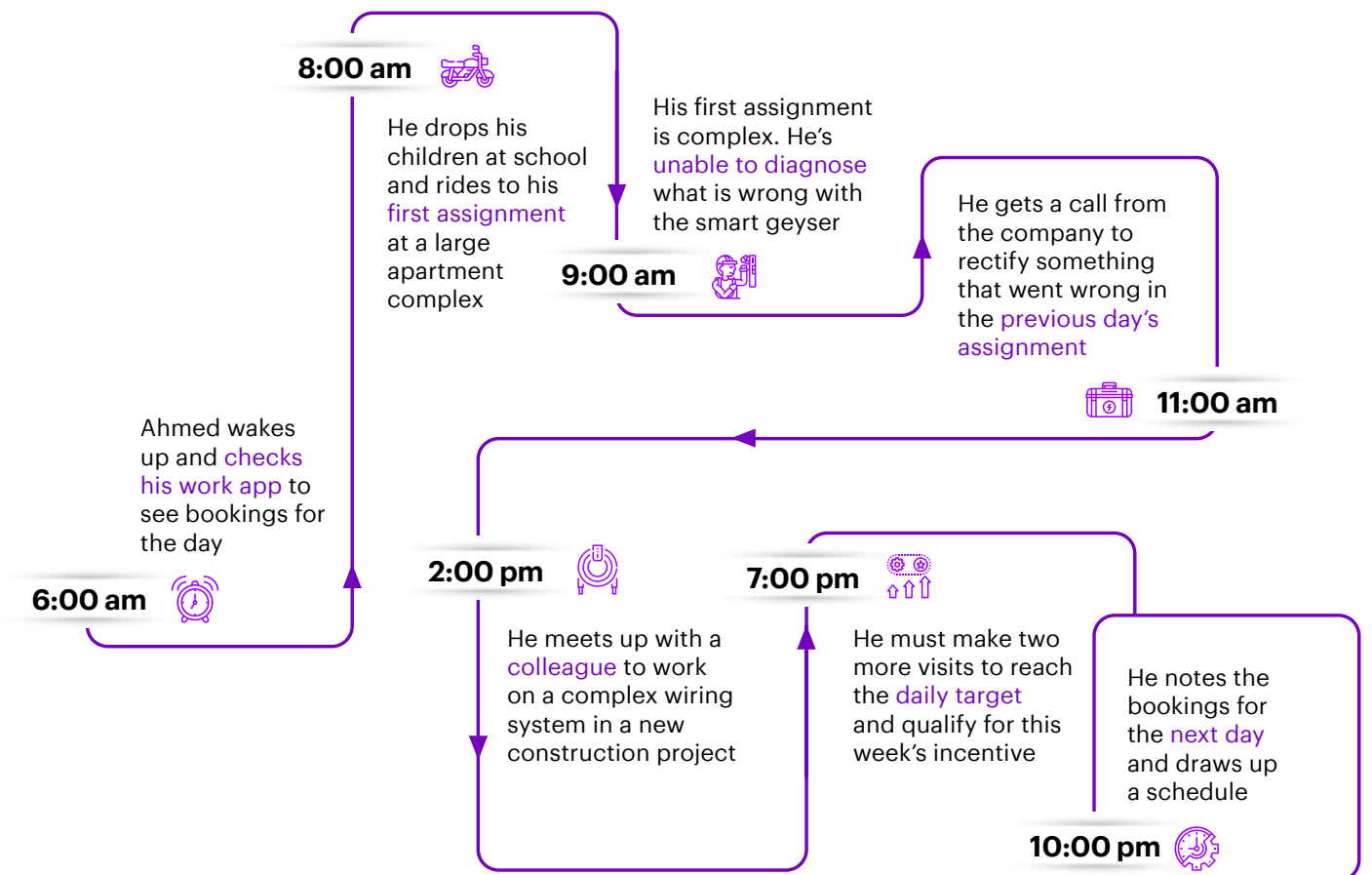
Let us look at a day in the life of Ahmed today and use that as a basis to project how it could change by the year 2025.

Day in the life 2020

Ahmed's current work day leaves him with little free time to learn new skills, and almost none for recreation. The flow of work is beyond his control, and his earning potential goes down as more workers join app-based platforms. Compounding the lack of steady income is the absence of any form of social security for him and his family. Traveling across the city the whole day from one service location to another takes a toll on his health and wellbeing. It also causes significant delays and attracts negative ratings from customers. As customers invest in intelligent appliances and home automation, Ahmed will need to learn new skills.



Figure 1: Day in the life of an electrician 2020





Technology transition

Smart devices riding on the back of IoT and intelligent-assistants are having a profound impact on Indian homes. From smart bulbs to microwaves, digital gadgets are becoming commonplace as the Indian middle class becomes more open to adapting the latest home automation trends. Old ways of working will be replaced by machine-assisted methods. No doubt there will be a steady

stream of work – both from servicing new devices as well as upgrading existing home electric and lighting systems. This calls for a greater understanding of technology and being able to work with machines to get the job done, sometimes even remotely. Beyond the workplace, technology will transform other aspects of life, including learning, wellbeing, and mobility (see Figure 2).

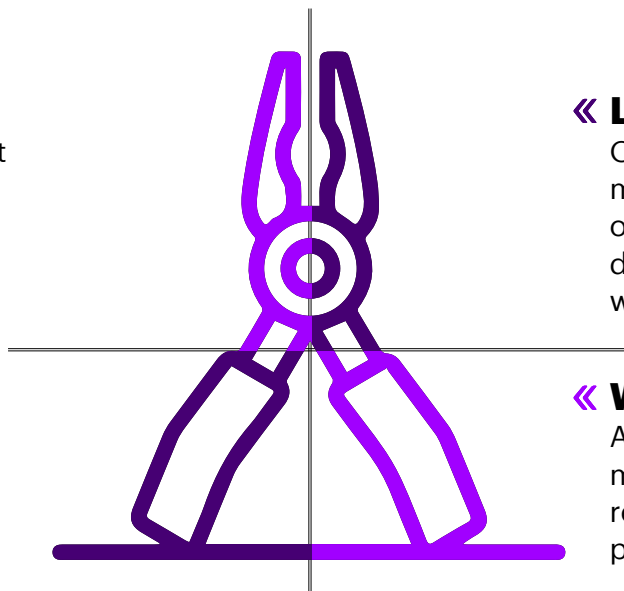
Figure 2: Technology tools to augment human effort and improve the quality of life

WORKPLACE »

Sensors and intelligent tools diagnose and fix problems faster and accurately

MOBILITY »

Remote evaluation and solving of minor problems reduce the need for travel



« LEARNING

On-demand learning via mobile app in language of choice; content developed by OEMs and workforce agencies

« WELLBEING

Assistive tools allow more time for family and recreation leading to positive health benefits

DAY IN THE LIFE 2025

7:00 am



Ahmed's **intelligent scheduling app** presents a workplan based on task and location

8:00 am



Riding on an electric scooter and the subway, he can move around the city **economically and seamlessly**

3:00 pm



He meets up with other contractors in the **office for a session** on customer service and problem solving

9:00 am



With the help of **sensors** and a **mobile app**, he can remotely address a configuration issue with the lighting system

6:00 pm



Ahmed is back home early. His **fitness band** shows he has not completed the minimum number of steps advised for the day. So he decides to go for a stroll in the public park

12:00 pm



Using his mobile phone connect to **smart devices**, he **diagnoses problems** with the geyser and pushes updates to firmware

9:00 pm



He logs into his **language app** to practice how to communicate in English

Figure 3: Day in the life of an electrician 2025

Salesperson

SALESPERSON AT A FASHION RETAILER



Age: 18–24 years

Life situation: Just out of school, views this job as a temporary arrangement

Education: 12th grade

Skills: Forced to give up studies amid difficult family circumstances, no specific skill training

Digital fluency: Comfortable with smartphones and apps, mostly for entertainment and banking

Madhu and Rani signed up for a three-month retail customer service course organized at their village. Having had to give up studies due to difficult family circumstances, they shared a dream of moving to the city to support their families but also to pursue part-time degree courses on the side. They were lucky to be recruited by the same fashion retail chain. Living in the city, they've been able to send money home but still have not found the time and money to enroll in courses.

Their work schedules leave little time for any other activity. Both hope to become responsible for entire sections on the store floor, but they aren't making any conscious effort to become ready for the change. They've seen their standing and stature in the family and village improve after taking up jobs in the city. But their future at the retail store is uncertain with talk of marriage, arranged by their families, around the corner.

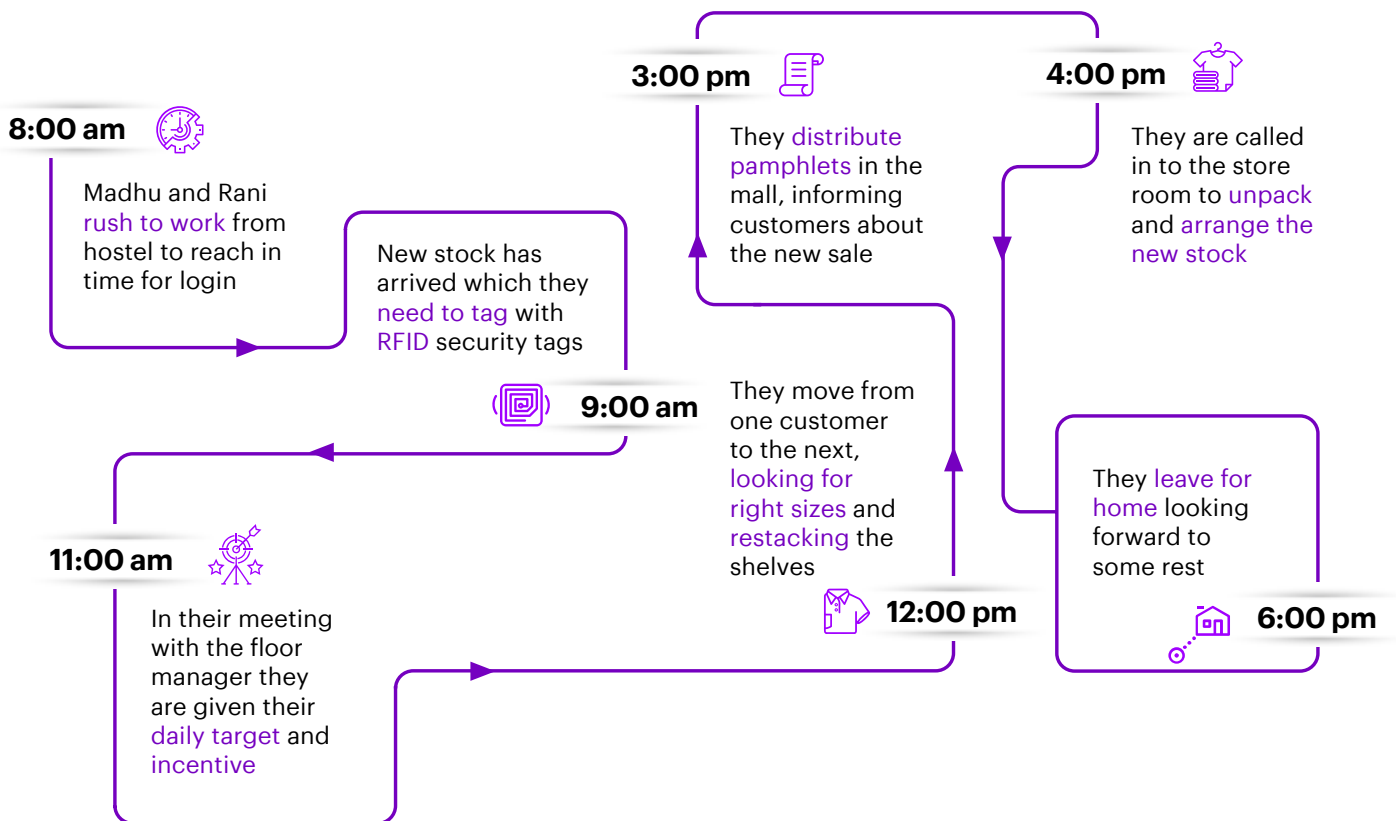
Let us step through a typical day in Madhu and Rani's life and explore how it could change by 2025.

Day in the life 2020

A typical workday for Madhu and Rani begins before the retail store opens for customers. They tag clothes and stack them up on shelves, and also get familiar with new collections in the catalog. On a slow day, they have to continuously arrange and rearrange window displays. Not being fluent in English, they often struggle in their interactions with customers. They've seen new in-store kiosks and payment systems and hope to become comfortable with those technologies in the near future.



Figure 4: Day in the life of retail salesperson 2020





Technology transition

The retail floor is a hotbed for innovation. From virtual reality (VR) headsets to cashier-less checkouts, there is a lot happening as retailers battle for efficiencies and with e-commerce marketplaces. The adoption of new devices and technologies has been slow

in India but could pick up quickly as the cost of acquisition and implementation declines. Madhu and Rani can see they need to learn how to use new tools and technologies to fulfill their dream of making a career in the retail sector.

Figure 5: Technology tools to augment human effort and improve the quality of life

WORKPLACE »

Garment folding robots and self-checkout kiosks to reduce need for mundane tasks

MOBILITY »

AR powered try-on apps reduces need for trial rooms and corresponding work for salespersons



« LEARNING

English language and customer service courses delivered via mobile app

« WELLBEING

Technology tools to monitor health and track progress

DAY IN THE LIFE 2025

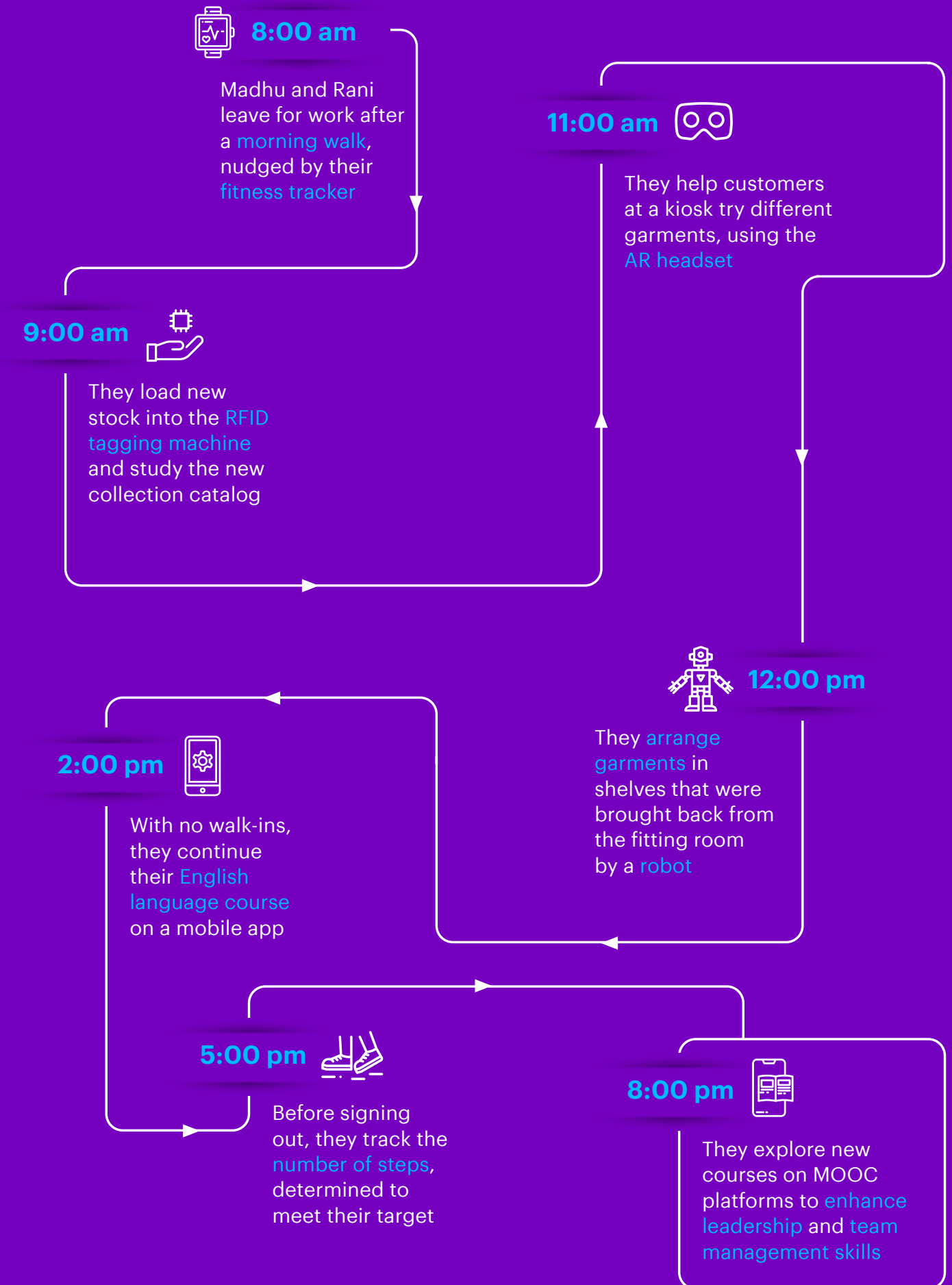
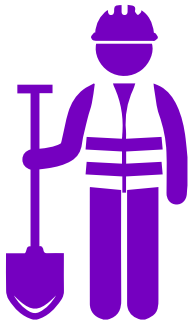


Figure 6: Day in the life of a retail salesperson 2025

Construction worker

CONSTRUCTION WORKER IN THE CITY



Age: 20–32 years

Life situation: Single, migrant; moving from one construction site to another

Education: 7th grade

Skills: No formal skilling, learning on the job, progress from helper to metal worker

Digital fluency: Limited use of phone, primarily for messaging and entertainment

Manik is the eighteenth person from his village in West Bengal to work at the construction site for a large contractor in Bengaluru. The city's real estate and construction boom has meant that many young people like Manik have made the nearly 1,250-mile trek in search of a job and better life. Manik, like many other children in his village, didn't have the desire or the opportunity for primary education. He dropped out of school after fifth grade, helping in the crop fields or taking up other odd jobs.

The fifth of seven children, he joined many of his siblings and cousins in construction. He started as a helper at construction sites, moving things around. After more than four years, he specialized in metal work and now hopes to become a work contractor himself- like the person who gave him a break in Bengaluru. He currently is paid wages each week by the contractor who has been retained by the builder. Manik is among the fortunate few who have reasonable living quarters at the site, and some type of accident and medical insurance.

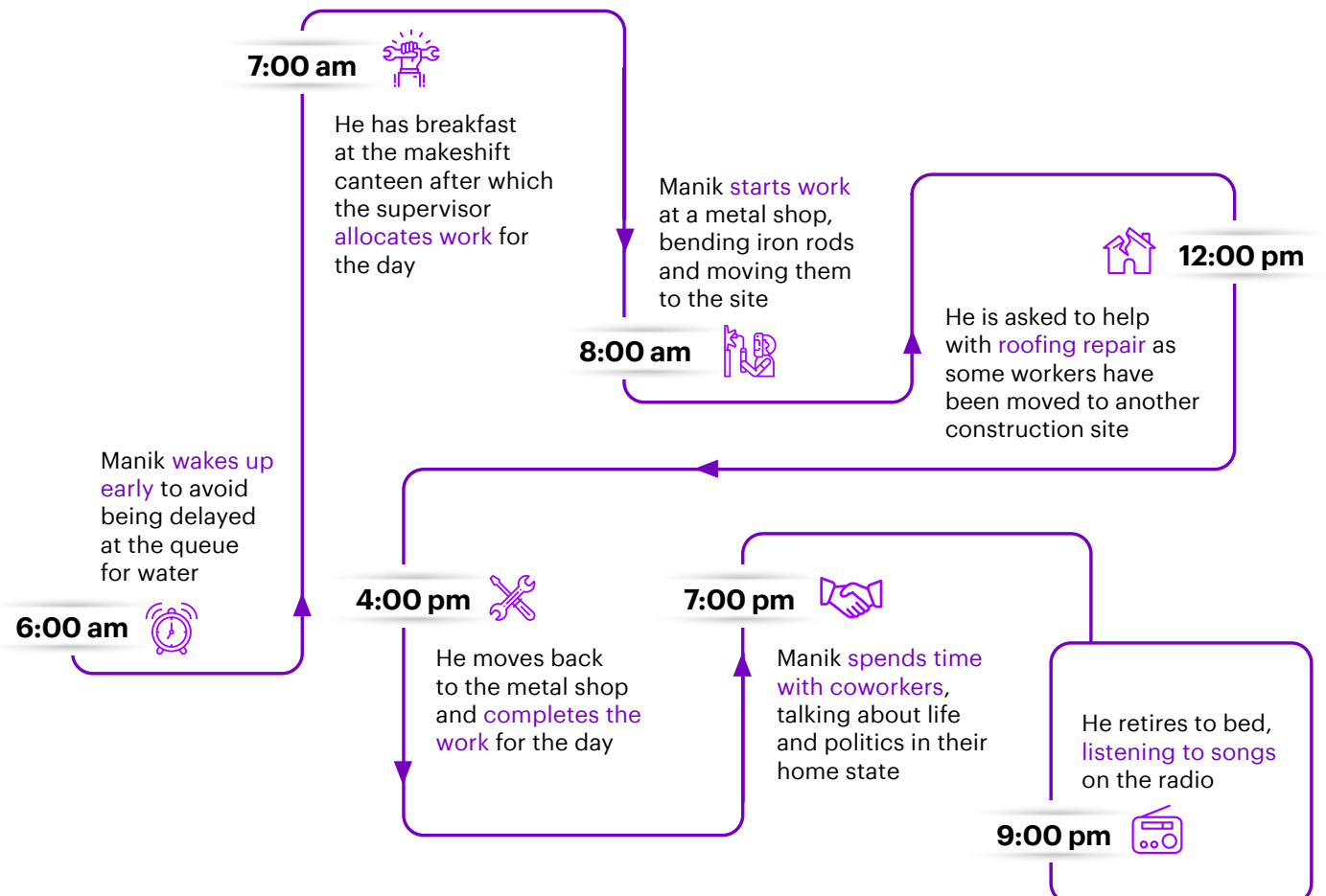
Let us look at a typical day in Manik's life in 2020 and visualize how it could transform by 2025.

Day in the life 2020

Manik's daily routine has remained unchanged in the past couple of years. Work and life – both have pretty much revolved around the construction site. He shares a shanty on-site with two other laborers and works approximately 10 to 12 hours per day. He has no time to engage in any skill development activities. The last time he did a weeklong recognition of priors learning course (as part of the Ministry of Skill Development and Entrepreneurship's Pradhan Mantri Kaushal Vikas Yojana), he got the completion certificate but was disappointed that it did not lead to any improvement in his wage. He is driven by a deep desire to make progress but is not very hopeful of that happening any time soon.



Figure 7: Day in the life of a construction worker 2020





Technology transition

The construction sector absorbs a large part of India's migrant workforce that follow temporary employment opportunities from one state to another. However, with builders investing in new machines for bricklaying and plastering, such jobs might disappear in the future. Overall, as real estate firms look to reduce costs and time for projects, there will be a bigger push toward automation in the

near future. That greater automation can help eliminate worker-related accidents would be an added bonus. But that's a few years away. In the meantime, low-cost laborers must be trained for the upcoming age of automation - not only to prepare them for the changing nature of jobs but also to improve their earning potential.

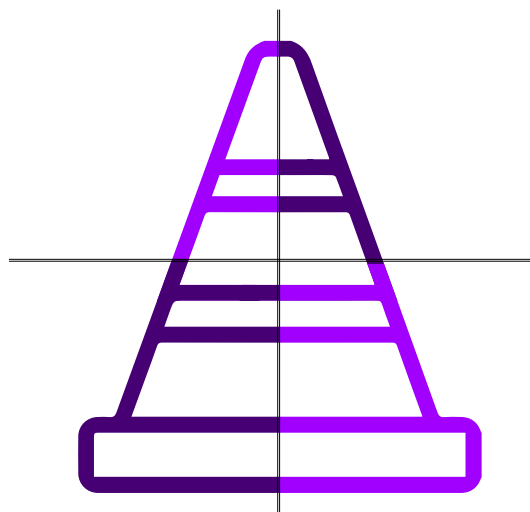
Figure 8: Technology tools to augment human effort and improve the quality of life

WORKPLACE »

Bricklaying machines and AR glasses to speed up work in a safe and effective way

MOBILITY »

Drones and robots help keep the worker on the ground rather than navigate potential physical hazards



« LEARNING

Training sessions on-site to fly drones and operate new machines

« WELLBEING

Smart helmets and sensors to protect workers at the construction site from any hazard

DAY IN THE LIFE 2025

8:00 am



Manik leaves for the site from a company provided house he shares with three others on an electric bus

9:00 am



He picks up his smart helmet and handheld device with tasks for the day pre-configured

3:00 pm



He attends a meeting of all workers where the engineer shows a blueprint of the building with AR glasses

10:00 am



He operates the bricklaying and plastering machine from the comfort of a cabin

5:00 pm



Manik spends the evening with friends, watching videos on how to fly drones

12:00 pm



He joins his coworkers in a session on health and safety

8:00 pm



He unwinds at home and listens to an audio book

Figure 9: Day in the life of a construction worker 2025

Housekeeping staff

HOUSEKEEPING STAFF AT A CITY HOTEL



Age: 18–25 years

Life situation: Unmarried, seeking quick employment to support family income

Education: 12th grade

Skills: Attended short-term skilling program specific to the hospitality sector

Digital fluency: Comfortable with smartphones and apps primarily for entertainment

Priyanka had dreams of joining college and pursuing higher education. However, she gave up those dreams to seek employment soon after graduating from high school to support her family. A friend introduced her to a two-month course required for a job in the hospitality industry. She took it up without thinking twice and quickly picked up skills around housekeeping as well as food and beverage service. Now she is a trainee at a 150-room hotel in the busy part of a metropolitan city.

The housekeeping job is physically and mentally exhausting. It requires her to go from floor to floor, cleaning rooms and making beds. She wants to advance her career at the hotel but is pessimistic about her chances, given her lack of fluency in English and necessary digital skills. Will she be able to hold down her job for long, or grow in it? Would the adoption of digital technologies transform the nature of her work at the hotel?

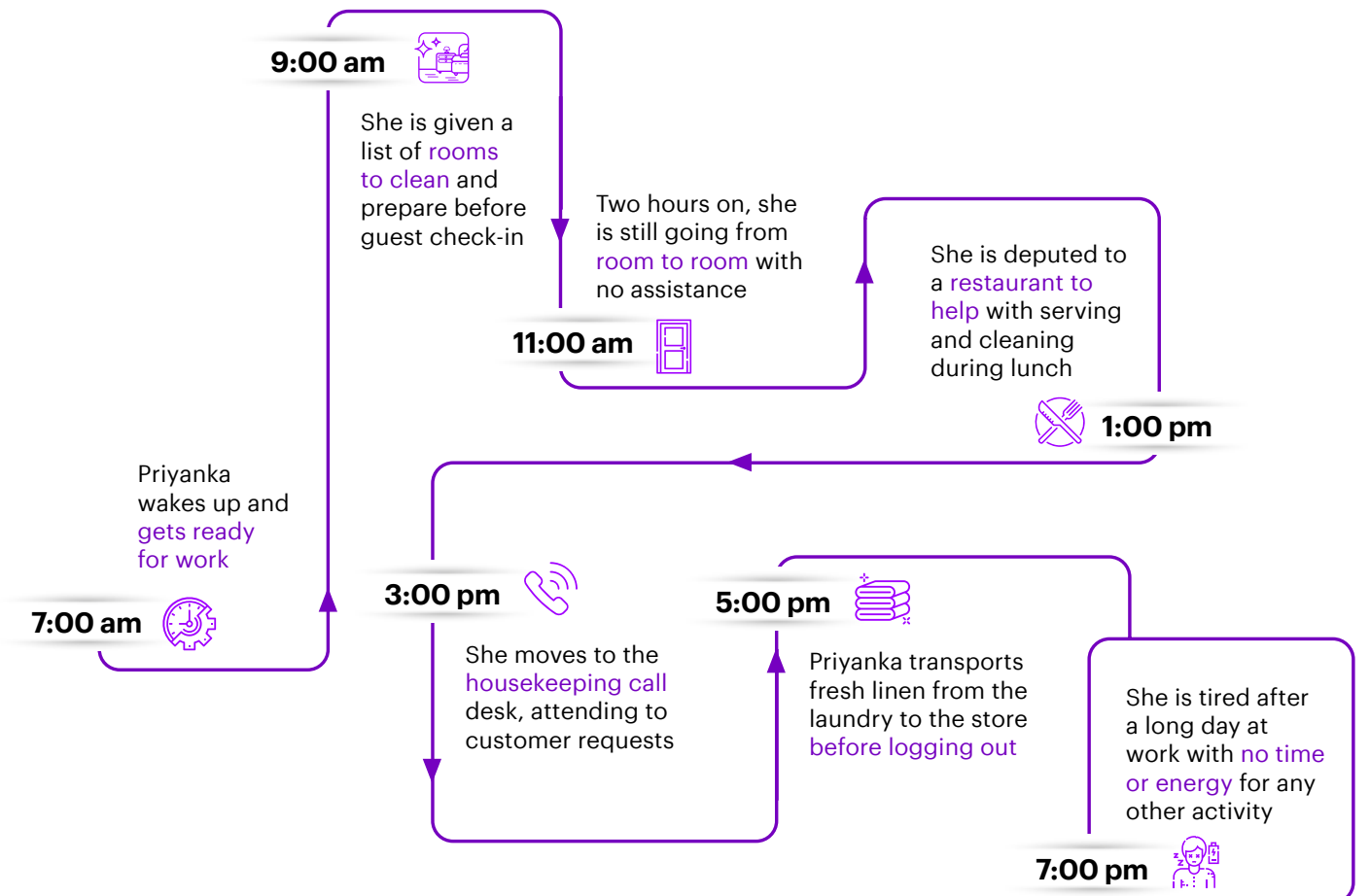
Let us look at a day in the life of Priyanka today and use that as a basis to project how it would change by the year 2025.

Day in the life 2020

Priyanka's workday is never short of challenges. The demands on her time from the beginning through the end of the shift leaves her with little time for any other activity. As the hospitality sector invests in new tools and technologies to reduce human effort and improve efficiencies, it becomes imperative for Priyanka and her colleagues to learn how to work with machines. Another critical skill for success in this sector is the ability to communicate effectively with customers which requires language and soft skills training.



Figure 10: Day in the life of housekeeping staff 2020





Technology transition

An important benefit of introducing intelligent machines and tools to help with housekeeping work is a reduction in manual labor expected from staff. Robots can help with mundane tasks such as cleaning and

polishing floors, stacking fresh towels in bathrooms or by the poolside, carrying and storing luggage, among others - leaving the housekeeping staff to do more high-value tasks such as supervision.

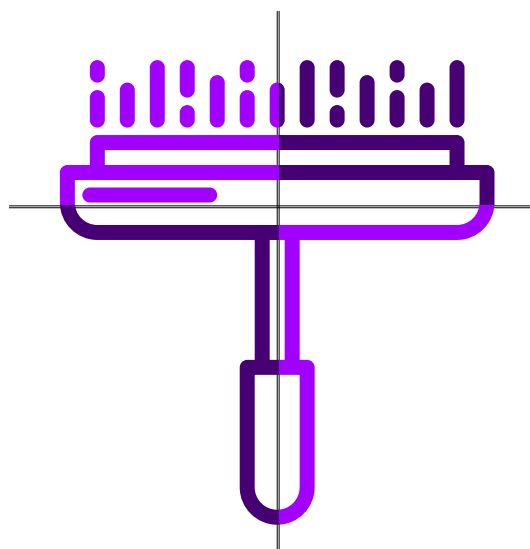
Figure 11: Technology tools to free-up staff time for value-added tasks

WORKPLACE »

Robotic cleaning partners free up staff time for more value-added tasks

MOBILITY »

App-based system to receive notifications on which floors and rooms need attention



« LEARNING

AR-based training to learn housekeeping tasks as well as for customer interaction and service delivery

« WELLBEING

Technology aids that reduce manual labor requirements. Mindfulness apps to relieve stress and build resilience

DAY IN THE LIFE 2025

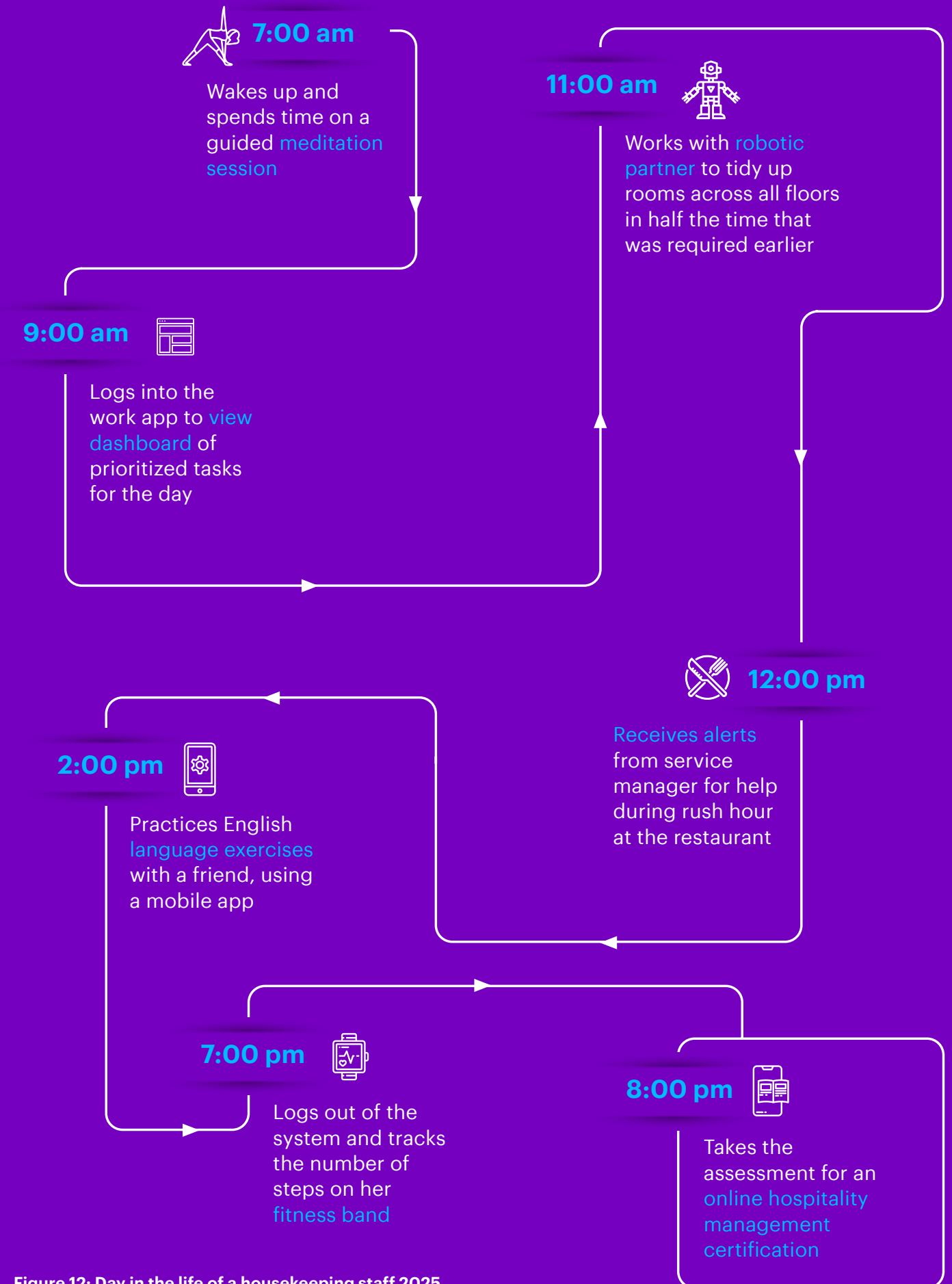
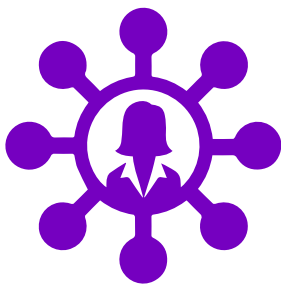


Figure 12: Day in the life of a housekeeping staff 2025

Microentrepreneur

ENTREPRENEUR AT A RURAL HOME ENTERPRISE



Age: 35–45 years

Life situation: Married with kids, aiming to add to family income and fulfil dreams of her children

Education: 10th grade

Skills: No formal skilling, married early due to family pressure

Digital fluency: Not very comfortable with smartphones, limited to messaging

One evening, Aparna met five of her friends in the village primary school on the outskirts of Bengaluru. They've been running a cottage industry making pappads (sun-dried lentil crisps) which they supply to nearby hotels and grocery stores. The reason for the meeting was to discuss a thorny issue: Unseasonal rains spoiled their operating plans that rely on sunshine for drying the pappads - leading to unfulfilled orders and lost business.

A drying machine can solve this problem. However, they've been unable to raise finances after the local bank denied them a loan. It is estimated that in India, only 4 percent of MSMEs have access to a formal source of funding.¹³ Although each person in the group is motivated to grow the enterprise, they lack awareness of alternative financing options or even ways to expand the reach of their products.

They've heard about the promise of the Internet and what it could do for them. But where do they start?

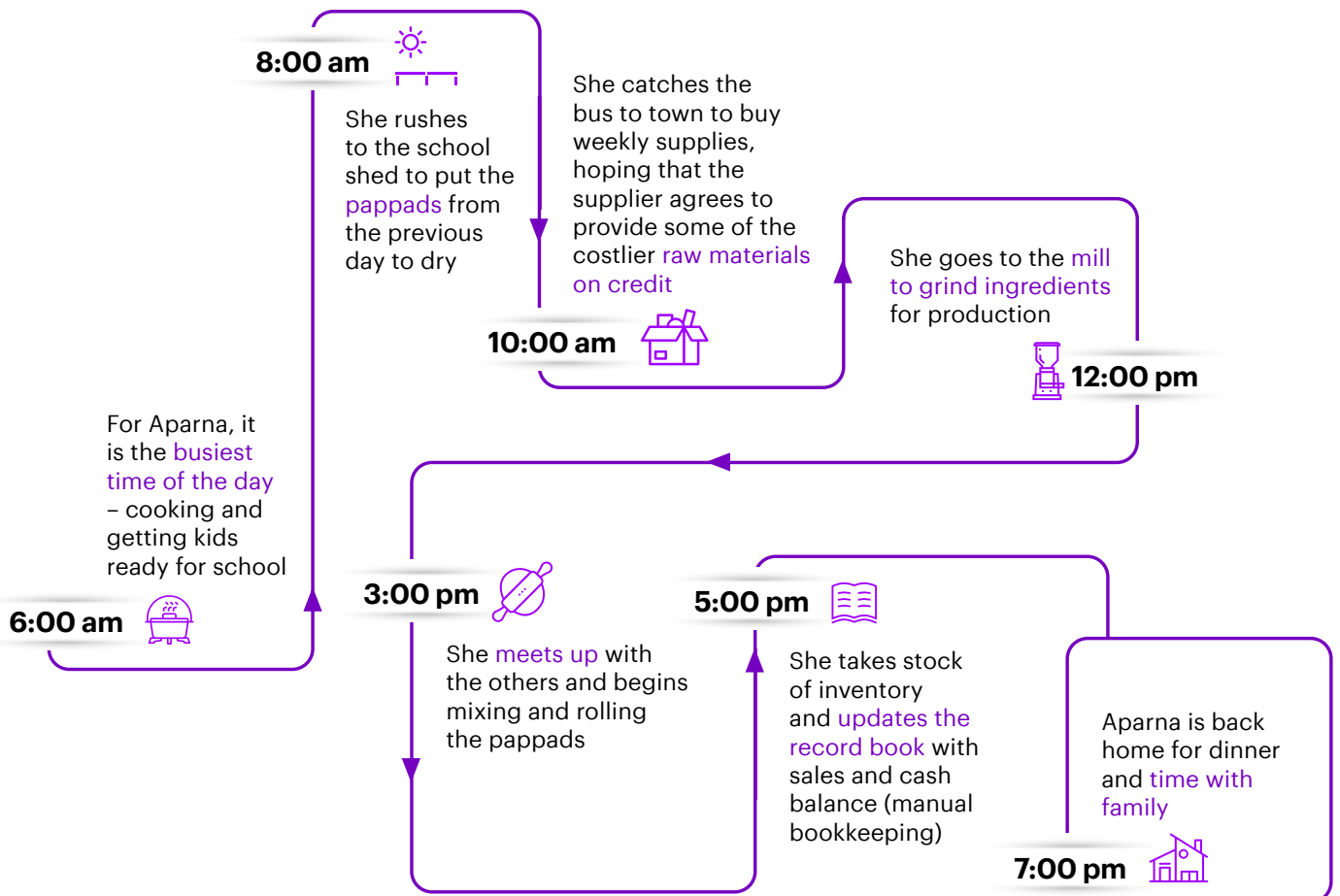
Let us take you along the journey of this energetic group and see how their fortunes could change by 2025 with the introduction of new tools and technologies.

Day in the life 2020

For Aparna and her friends, each day is a new challenge. But what they lack in access and resources, they make up with grit and determination. The daily grind and the numerous unknowns make it almost impossible for them to create a sustainable and scalable business. Not surprisingly, they are unable to tap into the appreciation and growing demand for their products. They are aware of the deficiencies and inefficiencies in their processes, resource management, and utilization of time.



Figure 13: Day in the life of a microentrepreneur 2020





Technology transition

Microenterprises such as those run by Aparna and her friends can use the Internet and technology tools as a force multiplier to create a high-growth, sustainable business. Unknown to them is the power of online platforms such as those for raising funds or creating marketplaces for homemade specialty products. To understand or access such platforms, they need to be trained not only in how to make pappads (or similar products), but also on how to use the Internet and digital devices for business purposes.

Given their family commitments and travel limitations, the training must be delivered in a way that is accessible and convenient for them. Training modules developed creatively and delivered via a mobile app could potentially open new ideas and a world of opportunity for them. Technology aids can also help automate support processes, giving them more time to invest in developing skills as well as rest and recreation.

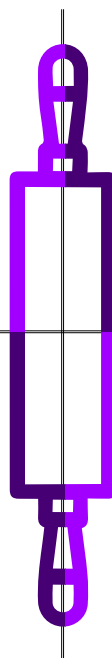
Figure 14: Technology to scale the business and improve the standard of living

WORKPLACE »

Apps to make support functions more efficient and quicker. Use Internet to expand product reach. Machines for drying, grinding and mixing

MOBILITY »

Subscription to online delivery platforms, drastically reducing commute time and expanding market




« LEARNING

On-demand learning via mobile app on communication, marketing, crowdfunding, online marketplaces, etc.

« WELLBEING

Wearables and mindfulness apps to monitor and improve health of self and family


DAY IN THE LIFE 2025

6:00 am 

No more rush hour for Aparna as she knows that there is **enough time** to accomplish tasks for today

9:00 am 

She checks her **notifications** for new orders and to review **customer feedback**

 11:00 am

Aparna goes to the unit to pack new orders and schedules pickup via an **online platform**

4:00 pm 


She meets with partners to review weekly business using a **shared online spreadsheet**

5:00 pm 

Aparna works on a **new post** for **social media** on their latest healthy pappad variant

12:00 pm 

She performs a quality check on the small assembly line that is **fully automated**

 8:00 pm

She now has time to learn English language and **web development basics** online

Figure 15: Day in the life of a microentrepreneur 2025

How to help marginal workers succeed in the age of automation

The working day of each of the occupation groups will fundamentally change by 2025. Traditional job descriptions will become obsolete as machines take on routine tasks and people move to higher-value services. The salesperson on the retail shop floor will need to learn to **use VR headsets and intelligent devices to offer a personalized experience to shoppers**. An electrician will need to understand how to diagnose and fix problems with sensors and smart devices. A microentrepreneur will leverage the power of the Internet and new financial technologies to open the door to new markets and resources. Even with all the technological advancement, there will be no substitute for uniquely human skills and qualities. In India, with an abundance

of human resources, even as automation continues, demand will increase for labor across these occupation groups. However, workers cannot stand idly during the AI revolution. Our research shows these workers, irrespective of their occupation groups, want to learn new skills for a better quality of life.

India's skilling challenges are complex, and addressing them calls for an innovative and collaborative approach. Traditional skilling methods may be inadequate, especially for marginal and vulnerable workers in the informal sector, given the nature of their work and their lack of awareness of, or access to, automation. The large size of the sector, coupled with institutional gaps, only adds to the complexity.

Skill development programs don't always deliver the desired results. In some cases, the **curriculum tends to be focused on the trade without any exposure to the essential skills necessary for success**. In some others, the skilling ecosystems struggle with inadequate training capacity and lack of qualified trainers. As a result, workers often don't see an improvement in their job or circumstance, leading them to lose faith in the usefulness of such programs.

A successful training and upskilling ecosystem must meet the diverse and context-specific learning needs of workers of all ages, and education and digital literacy levels. What we propose is a **holistic mix of skills that need to be imparted on a sustained basis**, along with a market-relevant incentive structure in place. Figure 16 provides an overview of the type of skills most important for the vulnerable occupation groups under discussion and the institutions responsible for effectively delivering these programs.



SKILL TYPE

WHY IT IS IMPORTANT

WHO WILL DELIVER AND WHERE

Foundational Skills

- English language
- Numeracy
- Interpersonal communication



Foundational skills are critical to learning and earning. As most informal workers drop out of the formal education system very early on, any training program needs to compulsorily have a module building on foundational skills.

Such programs can be implemented by workforce development agencies with corporate social responsibility funding and delivered together with certification programs. However, these are difficult to run when workers are on the job. They must be informed about other options available online, say, via mobile apps that they can continue to use. English language skills can positively impact customer interactions for a retail salesperson or a hospitality sector employee. For example, the Multibhashi app is a simplified Language learning platform for upskilling vernacular speakers in spoken English.¹⁴

Digital Fluency

- Web skills
- Online transactions
- Utility apps



For workers to remain relevant and keep pace with new technologies, digital literacy must be taught from an early age and reinforced throughout adulthood.

Digital skills are essential today to perform value-added work and seize new opportunities. Employers currently lack any incentive to train their employees in the use of new devices and technologies. Access to government or private funds to drive digital skills uptake could help workers enter the formal economy and improve their quality of life. Organizations like Accenture can play a significant role in imparting digital skills in partnership with workforce development agencies. For example, Quest Alliance has developed the Quest App as a multi-device gamified platform that offers digital literacy and other related courses to upskill youth.¹⁵

Business Basics

- Social media marketing
- Fundraising
- Accounting



An understanding of business topics is essential to analyze market trends and respond to them effectively. It also helps improve productivity and competitiveness.

Training programs run by governments and non-profits focused on business ideas must be supported with tools and platforms essential to running a business. This could be in areas such branding, building websites, raising funds, and improving businesses processes. For example, the Mann Deshi Foundation provides access to financial education, skills and a support network for rural women entrepreneurs and their communities. They run a women's bank, business schools on buses, a helpline for advisory services and a community radio.¹⁶ Corporations can provide the tech expertise to help workforce development agencies take these solutions to beneficiaries.

Figure 16: Key skill types and collaborative program delivery

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Methodology

We conducted ethnographic observations among five distinct and disruption-prone occupation groups in India. The research captured a holistic understanding of individuals and their behavior, as it related to the tasks that make up their work.

We analyzed how the work profile of the respondents could be disrupted by technology. Understanding their current job tasks helped in predicting where technology could make a difference and how they can prepare for the future.

The ethnographic observations focused on:



A typical day of respondents



Current work methods



Attitudes and opinions toward current work and tasks



Views and opinions toward future work and jobs



Sourcing of work



Different tasks undertaken
(complete understanding of before, during and after work activities)



Tools and technologies used currently



Challenges faced in different tasks (current and potential future challenges – interesting and uninteresting, positives and negatives in the role)



Critical soft skills required

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