UPSKILLING CHALLENGES IN THE AUTOMOTIVE COMPONENT INDUSTRY

PLAYBOOK | FOR SENIOR LEADERS

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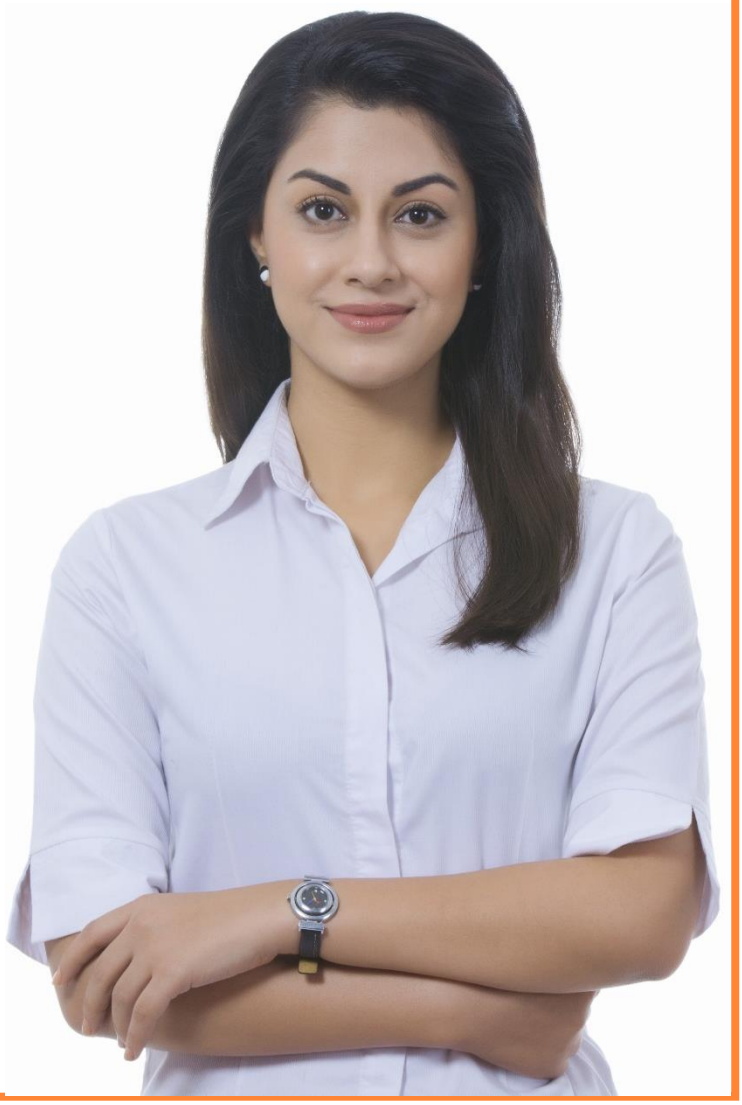
WHO WILL FIND THIS PLAYBOOK USEFUL?

This playbook is relevant for all senior leaders in the automotive and industrial component manufacturing companies. More specifically, this playbook will be useful to:

- Head of Human Resources
- Head of Research and Development (R&D)
- Head of Sales
- Head of Manufacturing
- Head of Dispatches and Logistics

This playbook will help you:

- Identify some of the areas where talent is not aligned to the strategic goals of the company
- Explore ways in which companies can maximize the potential of new and existing talent
- Examine a framework to measure and upskill your current workforce



THE CHALLENGES OF **FINDING THE RIGHT TALENT**

XYZ Motor Parts Pvt. Ltd. is a manufacturer of automotive electrical motors and electrical supply systems. The company sells its products to original equipment manufacturers (OEMs), after sales service providers, and bigger automotive component manufacturers.

With a pickup in demand for electric and hybrid vehicles, there is an imminent requirement for engineers and technicians competent in electrical motor control, battery and power management, sensor-making and computational skills. So, XYZ needs specialists in mechatronic engineering - who possess a combination of skills in robotics, electronics, computer, telecommunications, systems, controls, and product engineering.

However, there aren't many fresh graduates with the required skill-sets, and those who are there do not prefer to work for smaller companies. The other option is to hire professionals from other companies, but they are pretty expensive and won't fit in XYZ's limited hiring budget. The last option is to re-skill its existing workforce to adapt to technological advancement, but to make them take out time for the process during their busy schedules may bring the overall productivity down.

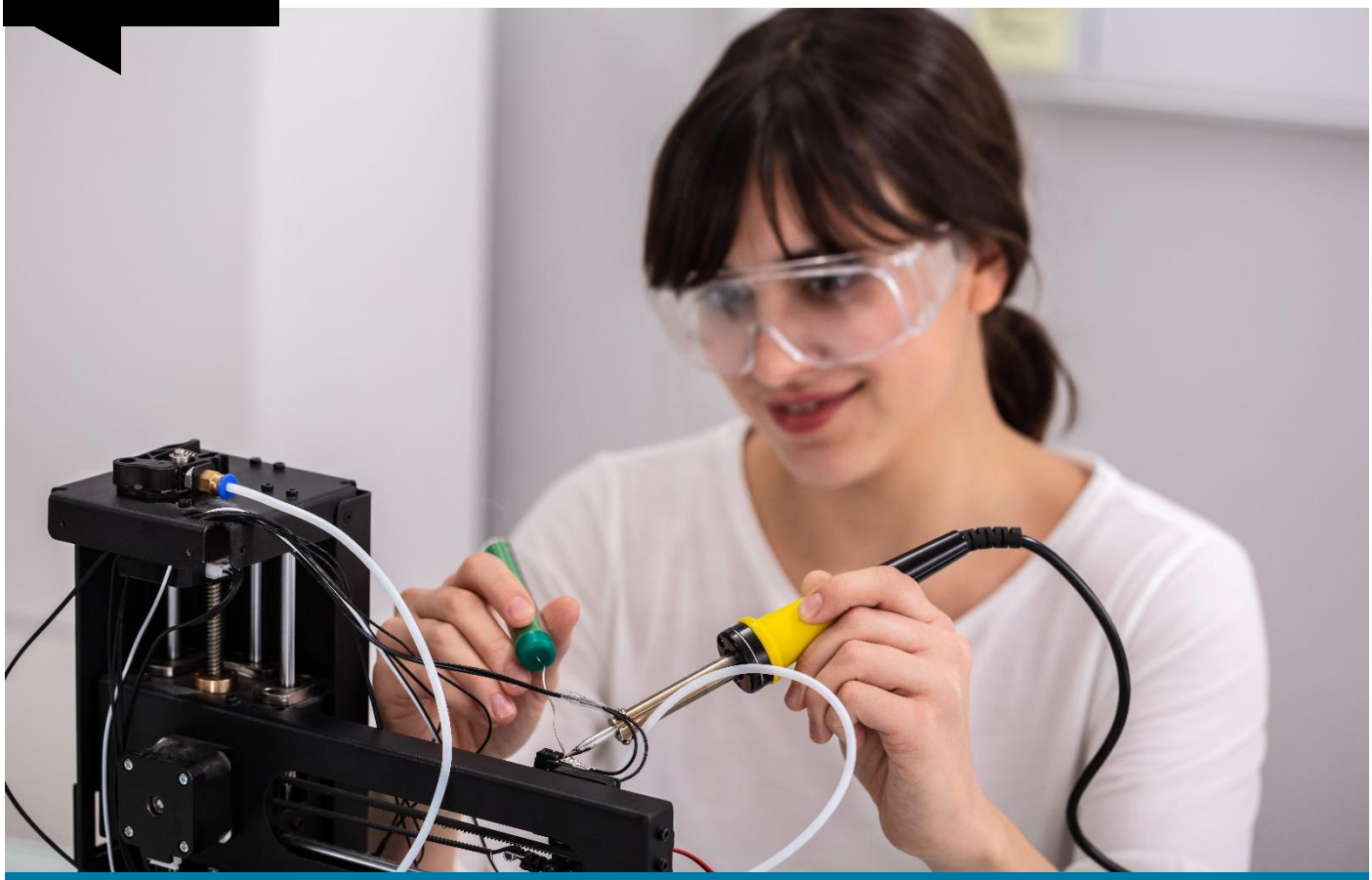
WHAT SHOULD XYZ DO?

Indian auto components industry, pegged at USD 51.2 billion[1], is expected to touch USD 200 billion by 2026 (Invest India – Auto Components Sector 2019). Meanwhile, the USD74 billion automobile industry is expected to reach $ 300 billion in the same period. As automation, digitalization, artificial intelligence, and data analytics revolutionize the automotive industry, availability of skilled workforce in adequate numbers is a new challenge. The talent-skill gap crops up in almost all the segments within automotive companies.

Let's look at the functional areas and challenges that many companies in this industry are grappling with.

THE PREDICAMENT OF THE R&D FUNCTIONS

SCENARIO



Noida-based ABC Ltd. is a maker of cast crankshaft and precision engineering components. ABC understands that as the industry continues to move towards higher-performance and more efficient engines, the weaker cast iron crankshaft will no longer meet the durability requirements needed for these high-performance engines. Although forged steel crankshafts meet these requirements, they are costly to produce. On the other hand, steel castings are cheaper than forging and can be made to meet the mechanical properties of forgings with good casting techniques and processes.

To develop technologies that will enable the production of cast crankshafts that meet or exceed the performance of current state-of-the-art high performance forged crankshafts, ABC needs to invest money in setting up and enabling a product development cum research and development (R&D) team, for which it hasn't found the right talent yet. However, it has limited resources for running operations, with OEMs pushing for more volumes at a lower cost. Unless it comes up with high-quality, high-value products, it will have to continue its business as usual. But if it does continue the way it has been, soon its products may become obsolete. What should it do then?

Manufacturers of automotive component often find themselves juggling with several problems at once. But to drive long-term growth, it is important to sustain R&D operations as it raises a company in the value chain and drives product development. However, R&D often takes a back seat because, for smaller companies, dealing with day-to-day problems (driving sales and meeting deadlines) naturally becomes more pressing.

Here are some of the major R&D challenges that component manufacturing companies deal with.

CHALLENGE 1

THE TRADEOFF BETWEEN PERFORMANCE AND COST

Although automotive component manufacturers are the driving force behind India's growing automobile industry, they do not earn much. Often businesses do not have large projects and instead work on multiple smaller ones. With limited resources in the capital-intensive industry, they have to keep the cost of building prototypes and developing products in check.

Unless funded by specific OEMs for custom research and development, there is only so much that component makers can invest in R&D. However, despite all limitations, they are required to come out with products with better functionality to remain competitive.

Alternatively, component makers need to supply products at a lower cost by cutting profit margins to keep the contract. Hence, they often end up making a trade-off between performance and cost.

CHALLENGE 2

PRIORITIZING PRODUCTS

At any point in time, most automotive manufacturing companies have several products in the development pipeline.

But to ensure which ones should be prioritized by dedicating the available resources can be challenging. This decision depends on various parameters, including the predicted future demand for that particular product, its profit-margins, the available talent, and budget.

Segregating the products in the pipeline—putting some of them on the fast track, excluding those that are not feasible and keeping others with low demand on the back burner— can be difficult.

CHALLENGE 3

R&D TALENT NEEDS NEW SKILLS

Today, in India, the available R&D talent is mostly trained in operational excellence, quality management, and maintenance management. These are the basic requirements of the automotive industry.

But R&D professionals are needed to go beyond that—they should know what it takes to develop a product, different development approaches, product designs, processes, materials involved, and the market requirements among other things.

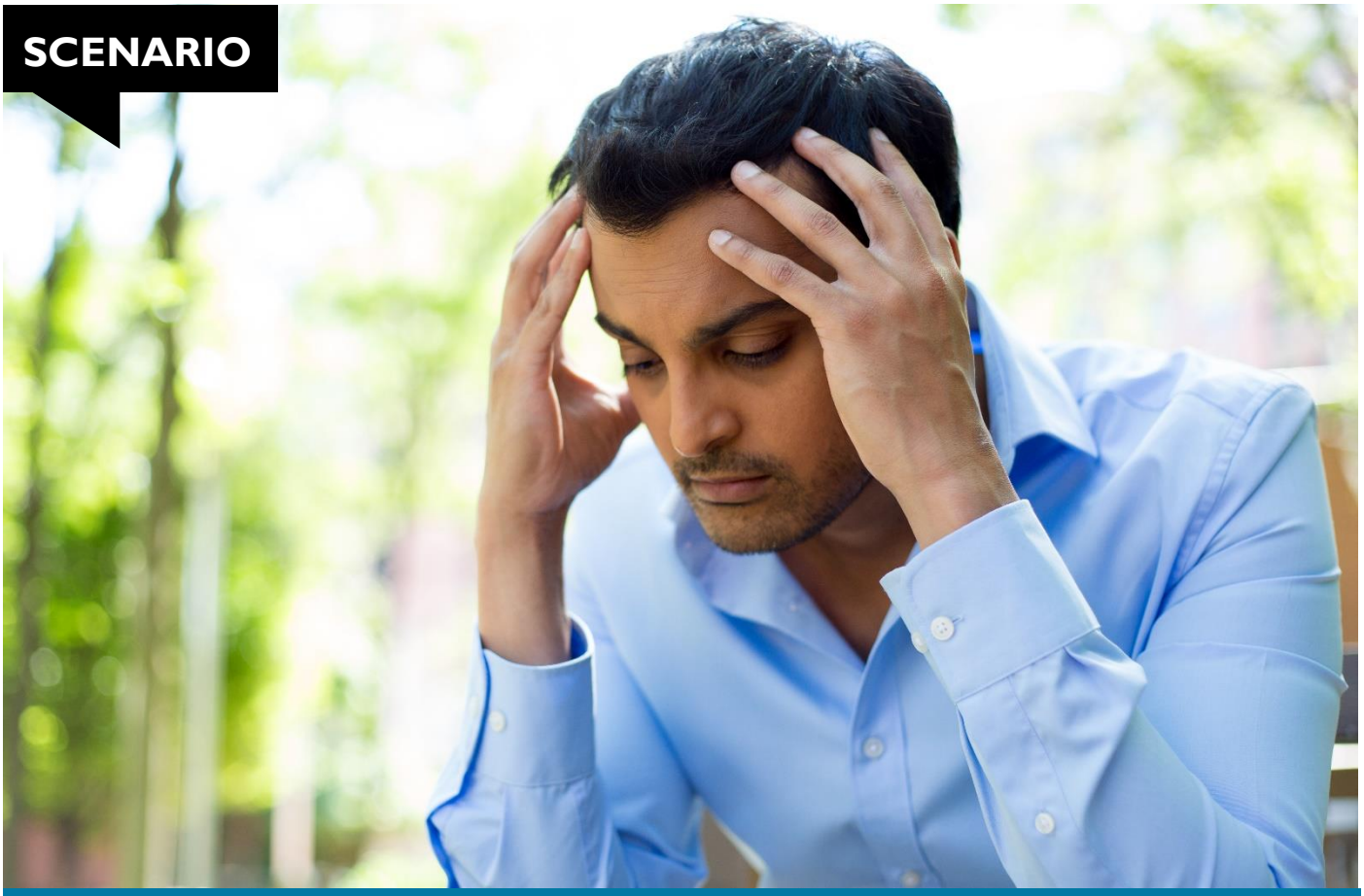
However, R&D people in automotive component companies do not have the required expertise. Skilled professionals who can focus on the details and look at the big picture simultaneously, either aren't available or are expensive. Moreover, R&D employees need to possess or acquire new-age skills such as data mining and data analytics and technologies such as machine vision, collaborative robots, artificial intelligence, and cognitive computing in IoT connected cars.

Skill gaps in R&D

- Knowledge of new production technologies, and software tools
- Technology knowhow such as, machine vision, collaborative robots, artificial intelligence, and cognitive computing in IoT connected cars
- Skill-sets around data science, analytics and process mining
- Interpersonal skills to create a collaborative ecosystem with other departments

THE STORY OF THE SALES FUNCTIONS

SCENARIO



CCC Auto parts Ltd., a Rajkot-based manufacturer of advanced and conventional braking systems and related air assisted technologies, has been a supplier for half a dozen OEMs. CCC realizes that the traditional, mechanical parts such as brake rotors, bearings, and air filters have become components with low-profit margins. So they are trying to provide value-added components for specific vehicles to the OEMs to create a differentiation for itself.

However, the company doesn't have good salespeople who can push for higher product prices while negotiating with the OEMs. Nor have they been able to monetize its value-added components. Thus, CCC's overall profitability hasn't improved in the past couple of years. Moreover, to maintain the current status quo, it has to settle for selling more volume at a lower cost.

Sealing deals and maintaining relationships with OEMs is a difficult task for the component manufacturing companies since the segment is highly competitive. They have to bag new deals and push for higher prices simultaneously so that they can keep the company profitable while investing in R&D.

Here are some of the common challenges involving sales functions faced by these component makers:

CHALLENGE 1

NEGOTIATING IT RIGHT

Most manufacturers have it hard while negotiating with OEMs for a price increase. To be able to convince clients to pay more, they need people with good sales and negotiation skills. But often these companies find it hard to hire and retain people with the required competencies.

Many component manufacturers also sell value-added products to OEMs. These products provide a cushion to the overall profitability during a downturn and also insulates them from the cut-throat competition.

However, these companies are often unable to pitch value-added products effectively to their clients and end up losing opportunities to earn additional revenues. Subsequently, they settle down for selling more volume at lower prices. This, in turn, hits the bottom line of these component manufacturers over time.

CHALLENGE 2

ANTICIPATING THE FUTURE DEMAND

Once manufacturers receive the specifications from their clients, they get busy with production, delivery schedules, and dispatches. During the process, they do not proactively engage in communication with the OEMs. As a result, they are unable to anticipate the future requirements of their clients.

Many component manufacturing companies mistakenly believe day-to-day meeting goals would help them sustain in the longer turn and that they would eventually turn profitable. However, the sustainable growth of a manufacturer lies in how well it can anticipate the changing product requirements from its customers and adapt accordingly.

CHALLENGE 3

OPERATING IN SILOS

A company's growth also depends on figuring out which other additional products they can manufacture with their current infrastructure, machinery, and process capabilities.

The sales team in most companies follow the philosophy of handover—get the order and hand it over to manufacturing. If there is a new requirement for a product, hand it over to R&D. The sales, R&D, and manufacturing teams do not talk to each other as much as they should. Thus, all these functions end up operating in silos. This results in a lack of coordination, which may impact the overall effectiveness of the product manufacturing and delivery process.

Skill gaps in the Sales function

- Effective sales and negotiation skills to get a better deal with OEMs and make money on value-added products.
- Skills to communicate effectively with the other functional area as well as clients to understand the gap between the market requirements and product development plan, and to correctly predict the future demand of products.

THE WOES OF THE MANUFACTURING FUNCTION

SCENARIO

MMX India Pvt. Ltd is a small manufacturer of automotive batteries and ride-control products including shock absorbers, struts and front forks for OEMs. Given its wide portfolio, some products have a higher demand than others. However, the products with higher demand have lower margins, while higher-value products don't sell as many units.

Since MMX has limited resources, the dilemma it is facing is how to allocate resources effectively to produce an optimal mix of high-demand, low profit-margin products, and low demand, high-margin products.

In a competitive and capital-intensive industry like automotive component manufacturing, companies need to better the quality of the products while adhering to the plethora of industry standards. And all this while keeping their budget in check.

Here are some of the major challenges involving manufacturing function that component manufacturing companies face:

CHALLENGE 1

KEEPING THE PPM AT THE MINIMUM

One of the major challenges that manufacturers face is to keep PPM under check. PPM refers to the rejected Parts per Million units. It is a critical metric which manufacturers like keep as low as possible (below 1%). It has now become a standard in the automotive industry among the plethora of benchmarks which components makers need to adhere to.

Keeping up with norms like VS6, QS Deming Award, and ISO quality measurement system is not only difficult, but also overwhelming. Most component makers are not sure if their manufacturing standards meet industry benchmarks. Moreover, the definition of "good enough" keeps changing.

CHALLENGE 2

DEDICATING RESOURCES

Component makers, at any point in time, have dedicated resources for manufacturing specific products. This means they have certain machines for producing certain components, and these machines are shared resources. As per the demand of multiple parts, component makers need to take a call on machines' capacity allocation.

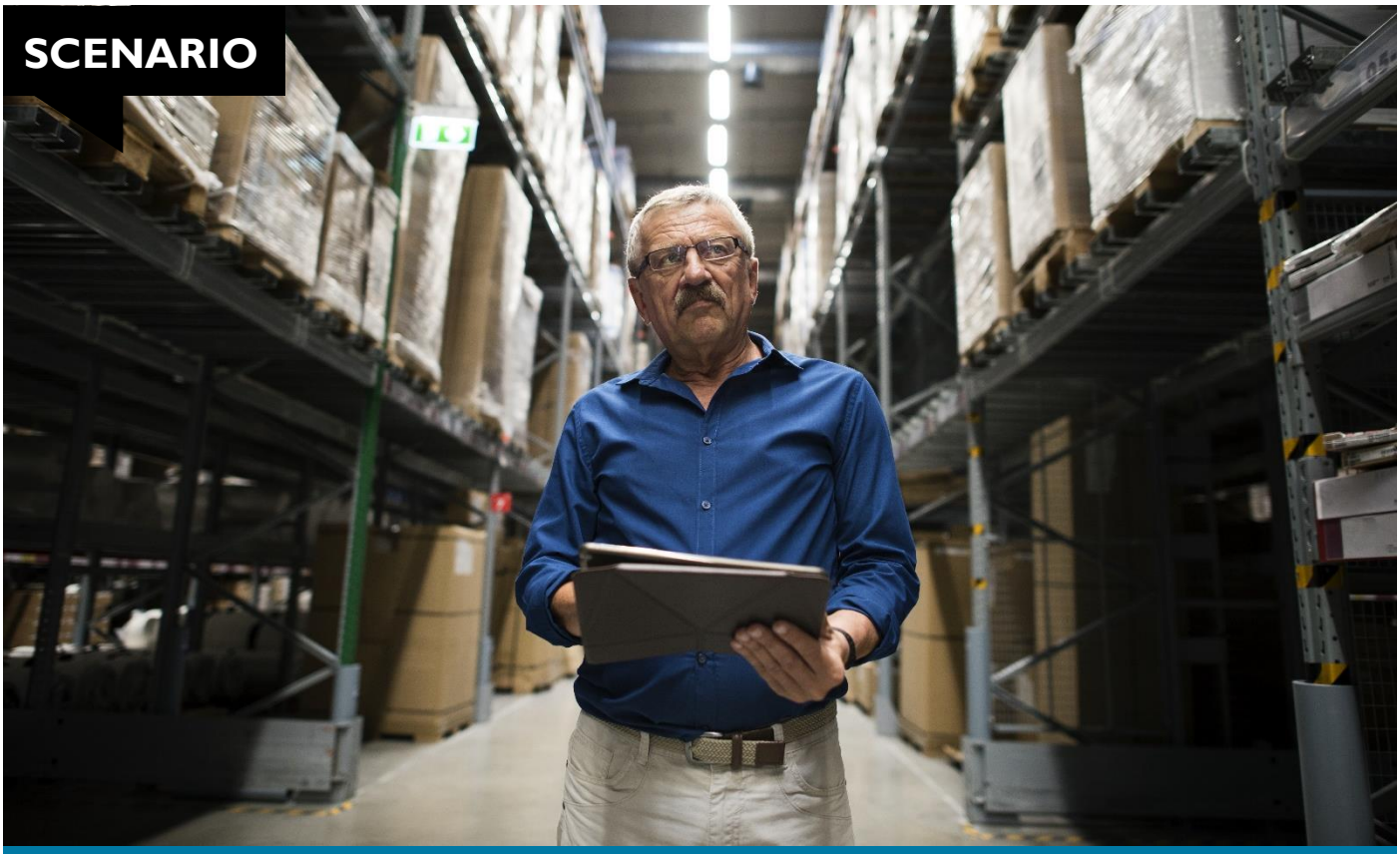
For instance, machine 1 can produce X units of part A and Y units of part B. Based on the demand for part A and part B, the component maker SMB needs to decide how many units of part A and part B, the machine 1 should manufacture.

Meanwhile, improper inter-departmental communication can pose a challenge as it may lead to wrong product mix and rejections due to the lack of clarity in product requirements, which in turn may cause a delay in product delivery.

Challenges in manufacturing

- Localization of the world-class manufacturing systems.
- Ability to manage the shared and dedicated resources on the shop floor.
- Collaboration with the contractors in an efficient manner and finalize the service level agreements (SLAs).
- Tradeoff between automation and labor employment

THE TROUBLES WITH DISPATCHES AND OUTBOUND LOGISTICS



SXS Pvt Ltd is a Pune-based filter and bearing manufacturer, which is supplying to a dozen OEMs. However, most of its customers have dynamic delivery schedules. Thus it is hard for SXS to predict the demand for its products.

In one of the cases, SXS ended up producing 500 extra units of bearings, when the order that finally came was for 100 units. While in another case, it produced 150 units of filters, but the next order was that of 300 units. In the first case, SXS ended up with extra inventory, which increased the cost of warehousing. Similarly, in the second case, SXS's delivery cycle was delayed.

Once the manufacturing process is complete, component makers need to take care of the timely dispatch of the products. However, managing the finished goods inventory can sometimes be a challenge.

CHALLENGE

MANAGING THE FINISHED GOODS INVENTORY

Managing finished goods inventory and keeping up with changing delivery schedules of the OEMs is can be an uphill task for component makers.

Uncertainty in demand for products and the inability to read the demand properly impacts the production schedule of the components. Because when the demand patterns are not well communicated to the manufacturing capacity team, they are unable to respond to changing schedules of OEMs. As a result, they end up producing goods that do not get sold. Similarly, if the demand changes too often, manufacturers end up being unable to plan the production properly, since it involves changes in the machines and the number of units produced.

This also resulted in rework, rejection, downtime, and increased delivery cycles. Thus, effective inventory management is crucial to cut down overhead costs and avoid delivery delays.

The outbound delivery team's job is to ensure that deliveries to the customers' warehouses are done most efficiently. But when product planning becomes ad-hoc and planning schedules are compressed, it becomes harder to manage the inventory pile ups that happen at their warehouses. Because planning is not synchronized, it impacts the performance matrix of the logistics team. Moreover, the delivery cycles get impacted, and the warehouse capacity requirements get inflated.

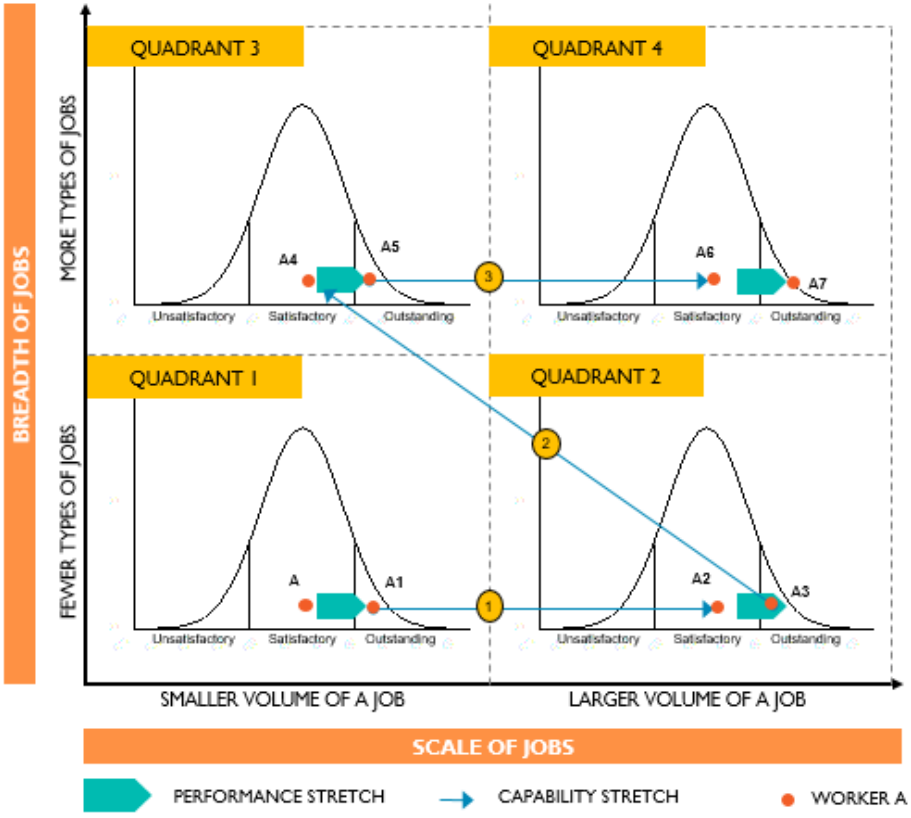
This increases the overall cost for these businesses, which, in turn, impacts the profitability of the companies.

Skill Gaps

- Ability to read the changing after-market structure in the automotive industry, which results in poor strategy and execution.
- Ability to align the delivery and logistics with strategic initiatives such as an increased market share in terms of volume and price in a given region. For example, Ahmedabad is a big potential market and a component maker with 10% of the market share aims to make it 2 0%, but doesn't have adequate resources to deploy.

So there would be a misalignment between resource deployment and the potential. This competency needs to be with sales, marketing, and dispatch planning people collectively.

TALENT DEVELOPMENT FRAMEWORK



Here, the X-axis implies the volume of tasks. Every worker has a dedicated scale of jobs. It could either involve working on a small volume of parts or a large volume of vehicle components.

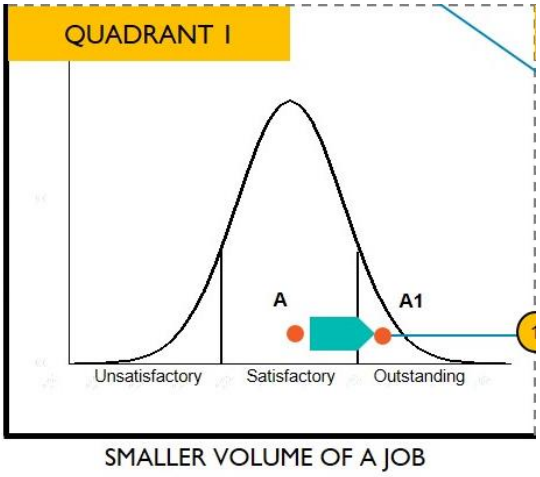
The Y-axis represents the types or variety of jobs, either based on the value chain or the nature of the jobs. Here, fewer types would mean only producing one type of vehicle parts, while more types would represent being able to work on different types of vehicle parts. Thus, a person can do a different variety of jobs in a role that he or she plays.

Each quadrant has bell curves separated into three areas. The middle part represents satisfactory performance, and it's where the largest number of employees fall in. On the left-hand side are the poor performers, while the right-hand side represents outstanding performers. So if we assume the axis of each quadrant implies 100% of the workforce, then the middle will have 66% of people who are doing their jobs satisfactorily. The remaining are either unsatisfactory or outstanding.

The red dot represents a worker A, moving from one point to another (A to A1 to A2 and so on) in the performance graph. The green arrow indicates a performance stretch. And the blue arrow indicates capability-stretch.

If you are an automotive component manufacturer looking to understand and enhance the performance and capabilities of your workforce so that they can deliver the expected outputs, you can consider the following steps:

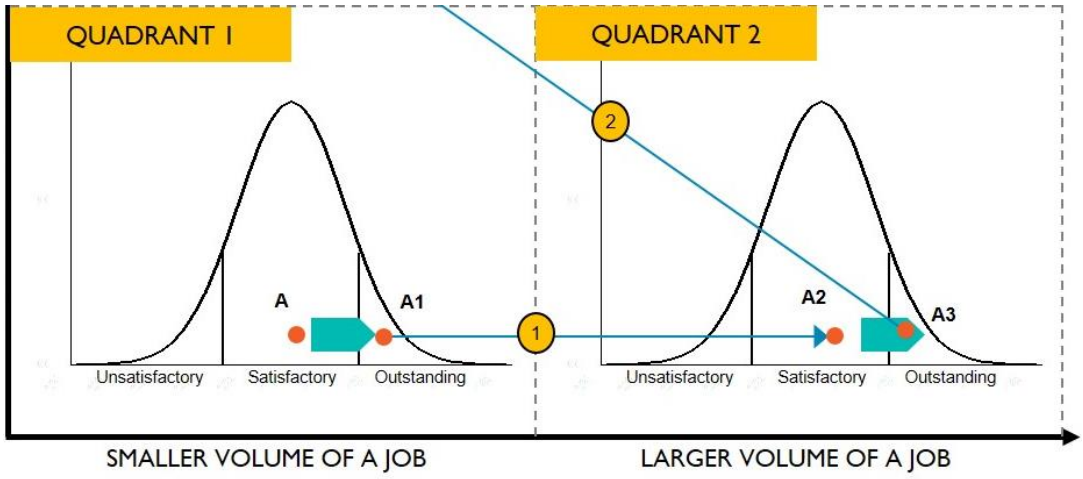
STEP 1



The first quadrant (bottom, left) represents employees doing ***fewer types of jobs*** and a ***smaller volume of jobs.*** If you want a worker to move from the satisfactory level performance (position A) to the outstanding performance (position A1), it would require a performance stretch. This means the employee would need to be more efficient when doing his/her job.

After the worker moves from point A to A1—from satisfactory to an outstanding level, the next step of evolution would be to have him/her take up *larger volumes of work* involving *fewer types of job.* This is where you come to the second quadrant (bottom, right).

STEP 2

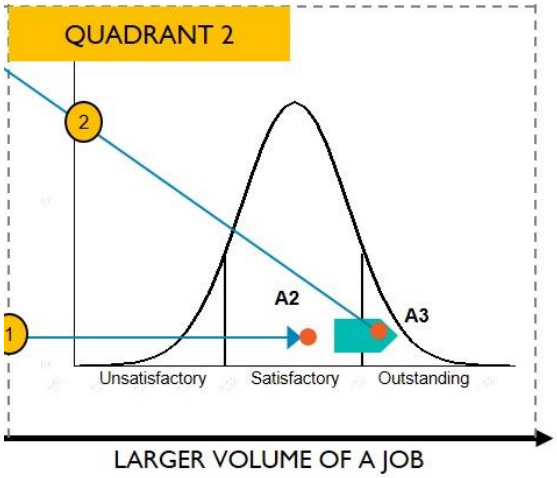


Quadrant 2 represents worker A, doing fewer types of jobs but a larger volume of jobs. Here, A is moving from smaller volumes to larger volumes of work, while doing one type of job. The shift from Quadrant 1 to 2 signifies stretching the capabilities of the workers – helping them handle larger volumes of tasks by training them accordingly.

If you look at the black arrow (representing the capability-stretch), it is moving from the outstanding level A1 in the first quadrant to the satisfactory level position A2 of the second quadrant. That's because when a worker takes up more volume of work, his/her performance usually ends up being satisfactory, rather than outstanding.

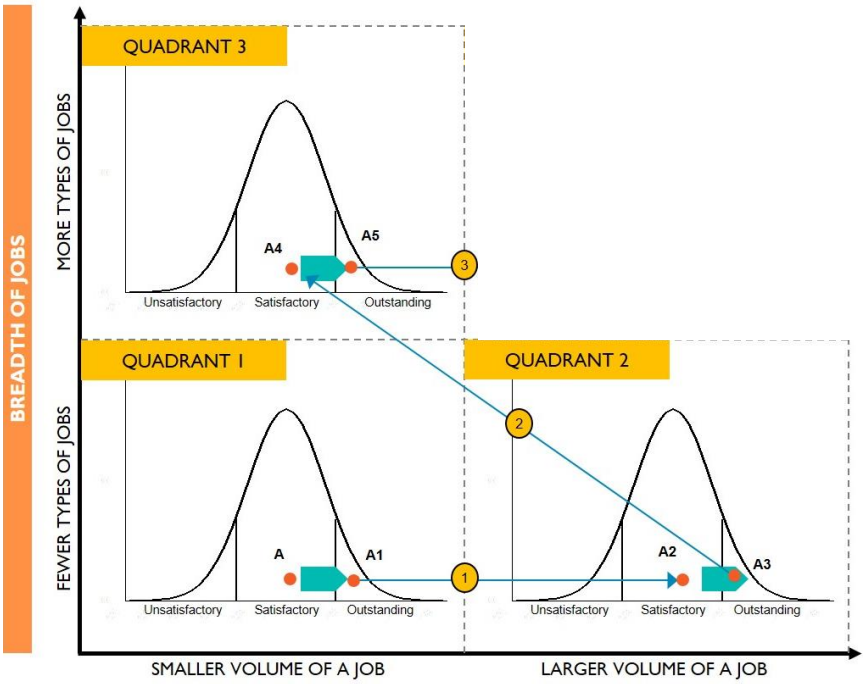
For instance, if a worker handling a shop floor for 500 units of product A per day in an outstanding way is suddenly made to oversee 1000 units of the same product a day, his or her performance wouldn't be as outstanding as before until he/she learns to become more productive. So until then, the performance of the worker would come down to a satisfactory level in the best-case scenario.

STEP 3



Bringing the outstanding quality in the larger volumes of work—moving the worker from a satisfactory level A2 to outstanding level A3—is the step that follows. And to achieve that, it requires the worker to enhance his/her performance by getting used to the workload and improving upon it gradually. Moving from A2 to A3 requires a worker to build tenacity, mental and physical stamina, and consistency in terms of quality.

STEP 4



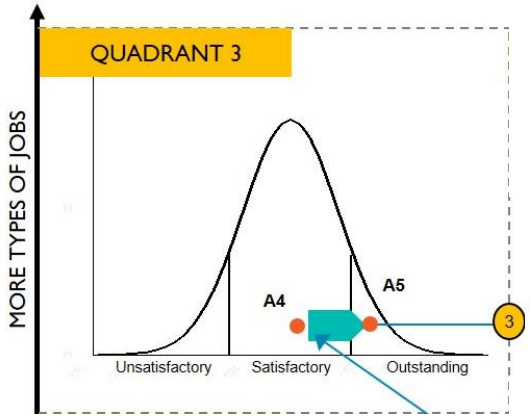
The next level of performance would be to do more types of jobs. So this movement is about adding newer capabilities in doing more types of jobs.

Worker A, who now works on a larger volume of existing tasks with outstanding quality, takes up an additional smaller volume of other types of work. This is where we move to the Quadrant 3 (top, left), which represents employees doing more types of jobs and a smaller volume of jobs involving new tasks.

This shift attempts to stretch the capabilities of the worker again. And again, the worker is very likely to land in a satisfactory zone for the new tasks he/she is undertaking.

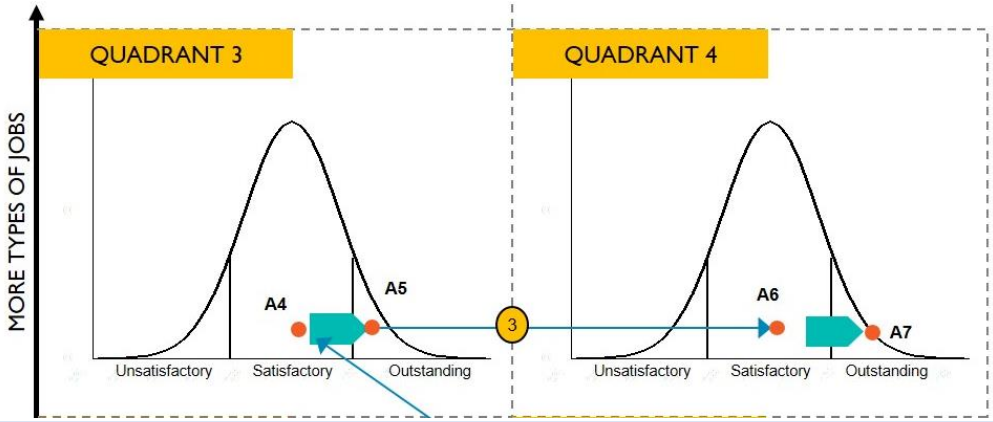
Thus, the worker now moves from an outstanding level A3 in Quadrant 2 to a satisfactory level A4 in Quadrant 3. At this point, the worker would be able to do larger volumes of older tasks at an outstanding level and smaller volumes of newer tasks at a satisfactory level.

STEP 5



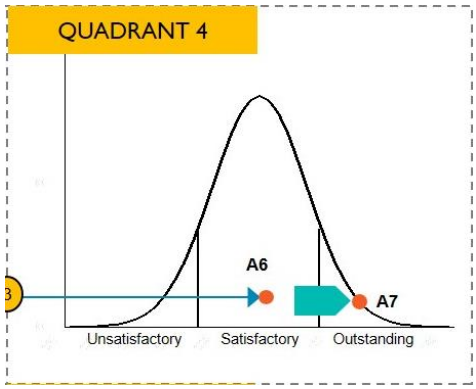
The next step would be to do more volumes of the older tasks and smaller volumes of newer tasks, both at the outstanding level (position A5), by improving the performance.

STEP 6



Moving from Quadrant 3 to 4 (top, right) signifies a new capability stretch for the worker, where he/she would do more volumes of the older tasks at an outstanding level and larger volumes of newer tasks at the satisfactory level (position A6). Here, Quadrant 4 represents employees doing more types of jobs and a larger volume of jobs.

STEP 7



The last shift would be to do larger volumes of the older tasks and larger volumes of newer tasks, both at the outstanding level. Hence, the worker now moves from a satisfactory position, A6 to an outstanding position A7 by enhancing his/her performance.

All these movements require enhancing one's performance and capabilities. The idea behind the exercise is to determine where each worker is in the performance matrix.

Let's consider a best-case scenario—you have a worker who shows a lot of promise in stretching his/her capacity and handling larger volumes of tasks. In such a situation, does it make sense to jump a few steps and push him or her from Quadrant 2 directly to Quadrant 4?

Let's find out.

THE PITFALLS OF AN EARLY PROMOTION

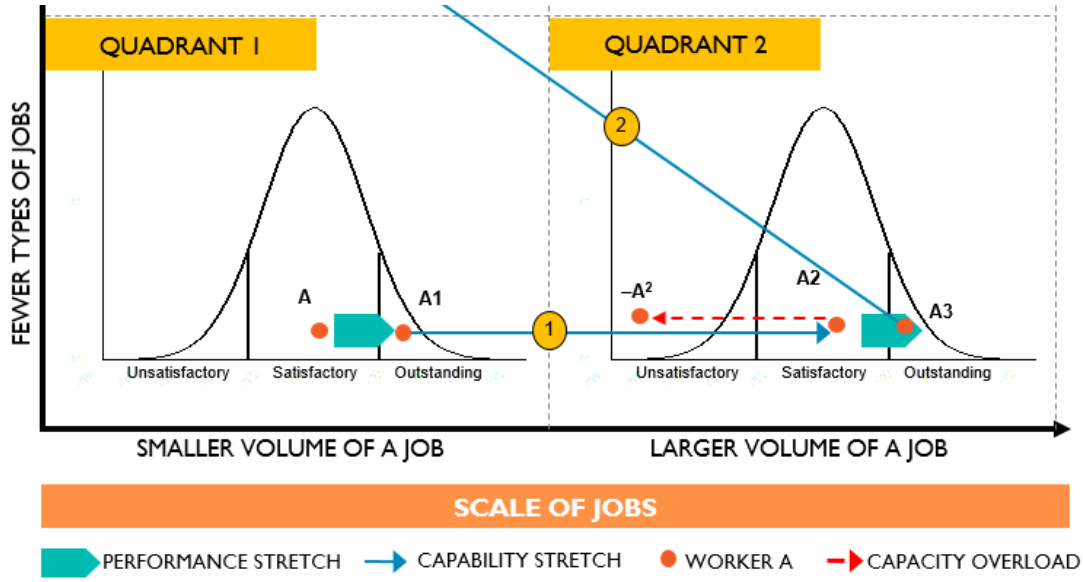
Who doesn't love an early promotion?

On the face of it, seems like a win-win scenario. The worker is delighted with a raise in position and pay, and the company has identified a star worker who is ready to take up a higher role early.

But stretching one's capability and taking up new tasks is an incremental process. Jumping the gun may deteriorate a worker's performance. For example, a worker who has recently taken up a larger volume of tasks and is performing satisfactorily may recede into the unsatisfactory zone if he/she is loaded with new tasks at the same time. So there is a limit to what every individual can do. This is where Peter Principle comes into play—when employees who are competent in their jobs are promoted to the next level, they may end up being incompetent.

Let's understand this better.

SCENARIO 1: ADDING LARGER TASK VOLUMES TOO

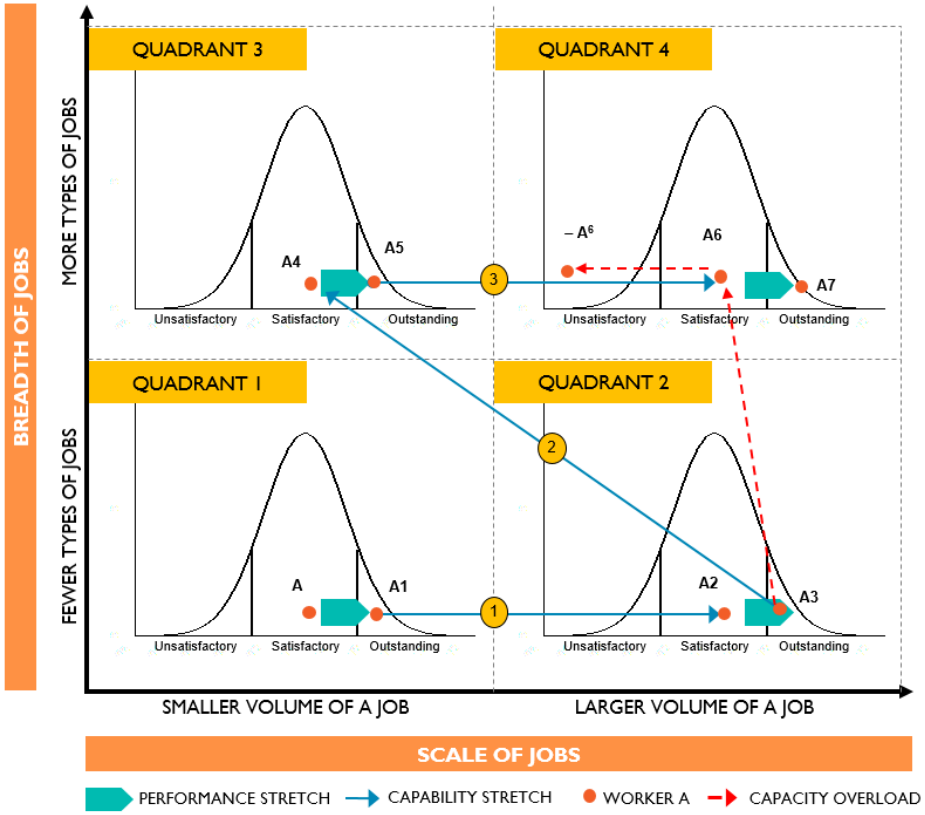


Consider the example of worker A, represented by the blue dot. A has successfully mastered his/her current tasks and has moved from A to A1 in Quadrant 1. What's more, when given a larger volume of his current task, A handles it well and moves into the zone of satisfactory performance from A1 to A2 in Quadrant 2. However, at this point, the leadership in many companies make the mistake of pushing the potentially good worker, a little too early. They add an even bigger volume of tasks too soon. As a result, A's performance drops, and he/she ***regresses*** from the satisfactory zone in A2 to the unsatisfactory or negative zone in $-A^2$.

There may also be chances that once worker A is loaded with larger volumes of his existing task, cannot even reach the satisfactory performance zone in Quadrant 2. He or she may start performing poorly in Quadrant 2, unable to handle the increased task volume.

As a leader, you need to understand and provide the requisite time for a worker to build the stamina for handling larger task volumes. A worker will likely remain in the position A2 for a while before moving to A3 where he/she becomes outstanding at handling larger volumes than before.

SCENARIO 2: ADDING NEWS TASKS TOO EARLY



Let's look at worker A in a different scenario. A has had a stable growth trajectory—he/she has successfully moved from satisfactory (A) to outstanding (A1) in handling smaller task volumes in Quadrant 1.

Furthermore, A has stretched his/her performance and now handles larger volumes of tasks satisfactorily (A2). Given a little time, A has stretched his/her capability and has moved into an outstanding zone (A3) when handling larger volumes of tasks in Quadrant 2.

Understandably, the leadership feels that A is a star performer and is ready for the next position where he/she will handle large volumes of multiple tasks as represented by the position A6 in Quadrant 4. But this is a trap that many companies cannot foresee. Handling large volumes of existing tasks outstandingly requires stamina, adding a new task requires a performance stretch on top of the worker's capability stretch. So the growth path even for a star performer needs to be gradual – from A3 to A4 and then to A5, in Quadrant 3, where he/she starts learns to handle a new task in time. A jump from A3 directly to A6 in Quadrant 4 is untimely and leads to a capacity overload. As a result, the worker cannot stay in the satisfactory zone in A6 and moves to an unsatisfactory zone in $-A^6$.

As a leader, it is important to remember that workers need time to learn and adapt to new skills before they can handle larger volumes of it at a satisfactory or outstanding level.