A Roadmap for Digitally Transforming the Operations of Labour-Intensive Organisations

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***Abstract*—In this paper, a roadmap for the incremental digital transformation of operations in labour-intensive organisations is presented. The roadmap utilises a developed reference architecture that takes into account the various areas of value creation in these organisations. It focuses on achieving practical and value-adding levels of digital transformation incrementally in all aspects of a labour-intensive organisation, not just the labour processes. The reference architecture is developed based on a brief analysis and comparison of labour in different manufacturing systems, supported by observational case studies conducted by the first author. The roadmap approach is then implemented in three phases: evaluating the current environment in phase 1, implementing lower-level or test bed methods of digital transformation in phase 2, and ultimately reaching high levels of digital transformation in phase 3. The roadmap also utilises a continuous improvement methodology, in which the roadmap is restarted after each implementation to identify additional opportunities for digital innovation at the operational level.**

***Keywords*—operations management, technology and innovation, incremental innovation, digital transformation, Industry 4.0, labour-intensive environments**

I. Introduction

In modern times the need to transform digitally is frequently raised. Digital Transformation (DT) is becoming increasingly widespread, and organisations must modernise if they want to stay competitive [1]. Challenges in Digital Transformation and Industry 4.0 implementation is quite widespread, where issues such as technology reliance, lack of skills, cultural hesitancy and cost risks are all discussed in recent research on the topic [2, 3].

Organisations that predominantly use labour for their product or service delivery, especially in a developing country such as South Africa, often postpone any such innovation. During this research, observational studies were used, where the postponement of Digital Transformation, and the lack of effective data collection, were evident. Additional factors such as fluctuating labour requirements, difficulties with data collecting, the lack of data-driven decision-making, transformation hesitation, and high unemployment rates all contribute to this type of postponement.

In developed countries, even the European Commission has noted the importance of finding a middle ground, where they defined Industry 5.0, the next shift in the ongoing Industrial Revolution, as a sustainable, human-centric and resilient approach to industry, in their EU publication [4].

Finally, consulting firms, such as McKinsey & Company have also attempted to address the Digital Transformation of labour-intensive firms, where they note the lack of data-collection and developed an analytical tool to boost the productivity and earnings of these firms [5].

Based on the research, discussions with stakeholders in a developing context such as South Africa, and the observational studies, a usable roadmap that enables practical levels of Digital Transformation is developed.

II. Research Methodology

This paper's roadmap and reference architecture were developed using mixed literature on Digital Transformation, including Industry 4.0, Industry 5.0, enterprise engineering, and the common challenges of and labor used in different manufacturing systems. Observational studies at two South African labor-intensive firms were used to substantiate and ultimately validate the research.

A. Methodology of the Roadmap

The roadmap is guided by Musango and Brent's three fundamental questions of an effective roadmap [6]: "*Where are we going?*" (Vision, mission, objectives, goals, and targets), *"Where are we now?"* (Current state of technology, products, and market), and *"How can we get there?"* (Policy measures, action plan, research and development programs, and strategies). The reference architecture covers the 1st and 2nd questions, while the roadmap steps address question 3.

B. Industry 5.0 Reference Architectures

Stellenbosch University's Enterprise Design textbook [7] mentions that some of the uses of Enterprise Reference Architectures (ERAs) include being used as a reference when planning an enterprise design or re-design project or used to develop a roadmap for a specific enterprise design or redesign project.

Due to the apparent lack of data collection, the use of layered diagrams, or levels - similar to the conventional automation pyramids and cyber-physical system architectures, such as by Nakagawa *et al*. [8] and Lee J, Bagheri and B Kao H.-A [9], were researched to map the different levels required for DT in these organisations.

C. Validation Methodology

The roadmap and reference architecture were shown to middle managers from a repair facility. Due to constraints, the repair processes were replicated at the Stellenbosch Learning Factory (SLF) where digital support was tested in

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increments. The results were presented to validate the value of the roadmap, reference architecture, and technology.

III. Digital Transformation Reference Architecture Development

Each labour-intensive setting is unique; thus, each would employ a unique set of DT strategies. This section develops a reference architecture (RA) for a general labour-intensive environment. The RA is used to map the value-creation operations of such an environment and understand the different areas, analyse any existing digital potential, and identify and develop new digital potentials.

A. *Levels of the Reference Architecture*

A level of digitisation is required before digitalising the labour-intensive process as computerised products and their collected information drive other operational processes [10]. Digital information must be captured from a process, product or system or converted from analogue or paper-based information. If a certain level of digital support is desired in an environment, qualitative and quantitative information is required to ensure a sustainable implementation without wasting resources.

For example, if a firm desires to add a new workstation or machine for a process (technological or not), they would not blindly add a workstation without researching the entire process and confirming if such an implementation is cost-effective and adds value before any implementation or change. The relationships between the data and technology levels are similar to the 5C cyber-physical system architecture outlined by Lee J, Bagheri B and Kao H.-A [9]. Technology is used to collect data via smart connections (level I of 5C) and to provide visual support for decision-making at the cognition level (level IV of 5C). The application level refers to the actual use of cyber-physical systems, that is, the implementation of a cyber-physical system (technology level) on a value-creation process or area (application level) to collect and analyse data (data level). The levels of the RA are structured in such a way, in Fig. 1, that the application level communicates with the information level, where data is collected from the various processes, managed, and analysed to then select a suitable technological implementation from the technological level. The technology is then applied at the application level on the specific process, area, or product, where the process restarts.

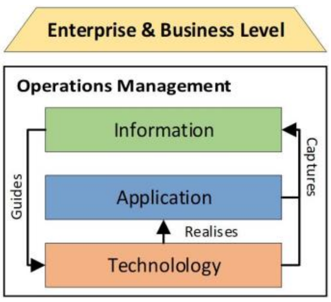

Fig. 1. Levels in the architecture.

B. *Elements of the Reference Architecture*

1) *Information level*

The information level represents the data-collection and management used to select and apply technology in each area of the application level. Data management drives additional transformation, and to manage data it first must be collected. The data collection tops the elements of the level and each area in the application level has the potential for data collection, which can be analysed and applied to introduce digital and technological support methods.

Data management, which allows performance management and process modelling based on the acquired data, represents the second element. The four sub-elements of data management are communication, performance management, process improvement, and analysis of the labour-intensive operational environment. Understanding the data and attempting to use it to enhance procedures or assess performance is, in the case of the RA, referred to as analysis. Any level of communication, or the act of sending and receiving data, is communication. As Digital Transformation requires data and connections and gives instructions to the software and hardware at the technology level, the data level serves as the foundation of the architecture. The latter two sub-elements, process improvement and performance management, are autological.

2) *Application level*

The application level is subdivided into common management areas found in the operations of various labour-intensive firms. The value-creation sub-area is used to generalise all areas of the user's specific process to four elements, the actual labour-intensive processes, any supporting processes such as machining, the process flow and synchronisation of the entire value-creation process and the collaboration and guidance between labour, supporting processes and any forms of cyber-physical systems.

Value-creation makes use of labour and equipment to produce a product or deliver a service. As such, labour management and equipment management are the next two sub-areas on the application level. Labour management involves the management of human resources on an operational level, while equipment management deals with the management of tools, equipment, machinery, and assets.

In operational labour management, workers must be allocated to a task, and be trained and their safety should be a top priority - any additional operational labour components, such as collaboration and guidance, are covered in the value-creation sub-area. All tools, equipment, machinery, and assets also must manage, where their use is controlled, their use is assessed i.e., the relevancy of their use is analysed, and the security of these items should be a top priority.

Finally, to create a product or deliver a service, inventory management and product/service management are necessary. Inventory management controls spare parts and finished products, while forecasting demand. Product management ensures quality control, customer requirements, and design. Both sub-areas significantly govern the actual value-creation process.

3) *Technology level*

The application level uses physical technology and software sublevels to apply each of its elements. The technology level is the simplest in the reference architecture and is populated by the user. There are two sub-levels at the technology level, the software and hardware infrastructure. The technology level is the field level, representing the technology used and applied in the environment, such as robotics, sensors, IoT systems and more. Using the RA to categorise the value-creation processes of a firm's operations.

The various levels of the architecture, developed and populated, are combined in the reference architecture for digital and technological support methods in the operations management of general labour-intensive environments, which can be seen in Fig. 2. The reference architecture is developed so the user can adapt the elements to cater to their specific requirements based on their goals and industry-specific environment.

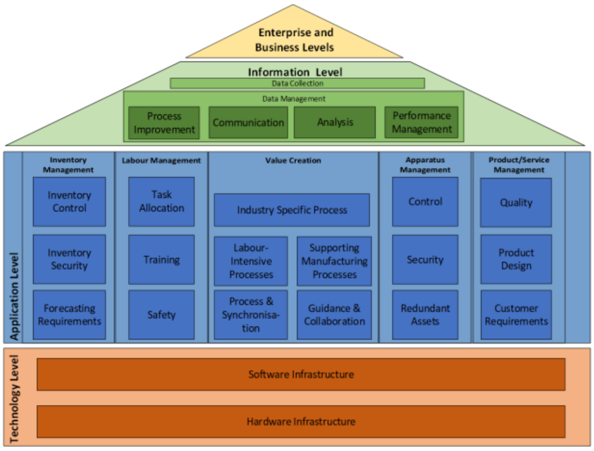

Fig. 2. Digital Transformation reference architecture for labour-intensive organisations.

First, the architecture should be accompanied by a process flow of any other visual or detailed document on the business processes of the environment. The accompanying document is studied in detail. The business processes are extracted to the reference architecture, where each sub-process, resource, various apparatuses, and the current digital climate is listed in the reference architecture format. Briefly, the method to map the environment on the reference architecture is as follows:

1) **Identify business process:** The accompanying process flow, SOP or other detailed document is used to identify the various business processes in the operations.
2) **Extract sub-processes:** All sub-processes, resources, apparatus, and digital/technological connections are listed from the business processes**.**
3) **Categorise:** The primary business processes and all accompanying business processes are categorised into the different areas of the reference architecture.

IV. Roadmap Description and Example Use

The roadmap's function is to provide such environments with a visual tool for implementing digital innovation in the various components of their operational environment as they start on their DT journey. The roadmap, seen in Fig. 3, uses three phases, and 15 steps, that are used continuously to implement various levels of digital or technological support in the operations. It also uses the reference architecture to answer the three fundamental questions of an effective roadmap, by mapping the current environment and visualising potential future states of the environment on the RA and using the roadmap approach to achieve a future level.

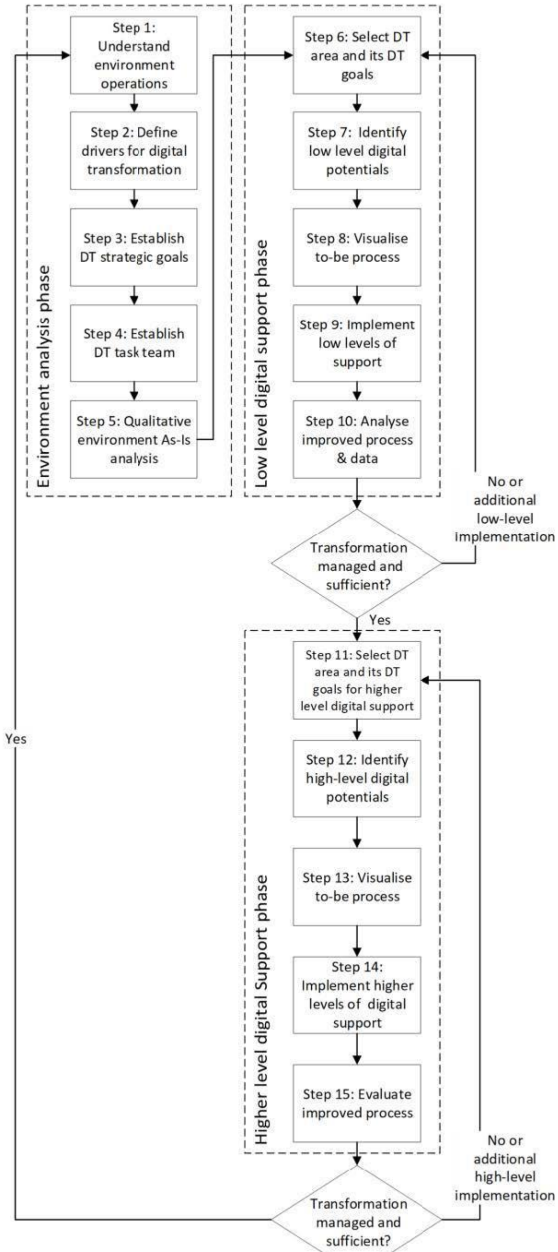

Fig. 3. A roadmap for the Digital Transformation of labour-intensive organisations.

The roadmap's goal is to serve as a guiding tool that encourages a practical and bottom-up approach to DT. The emphasis of the roadmap is on practical application of DT.

A. *Environment Analysis Phase*

1) *Phase description*

The first step in the roadmap is to understand and analyse the environment. Before deciding on what type of transformation a user environment wants to undertake, or how a user organisation plans on achieving this transformation, the environment first needs to define the need for change. In the first phase of the roadmap, the environment analysis phase, the reference architecture is used to map and categorise the different areas of the environment and understand the environment. After visualising the operations on the RA, the user environment can now define the internal drivers, such as waste management, process improvement or process modernisation, that are apparent after categorisation and the external drivers, such as market pressure and regulation. The drivers are then converted into strategic goals, where the organisation's own Industry 4.0 and DT vision and ideology are used to define their transformation direction i.e., the user environment decides how far they are willing to go, what they are willing to sacrifice and create their own set of DT objectives and constraints.

After defining the need for transformation, and setting up goals, the user environment establishes a task team consisting of stakeholders in the firm, including upper and middle management, and supporting staff. Middle management input is especially important in the labour-intensive context, as those in control of the various areas in the environment, would function as supporting roles in the DT task team to verify the viability of the implementations, inspire the ground personnel, and receive input from the bottom up.

Given that these environments frequently lack usable data, a qualitative analysis is used to further understand the environment. This step is to pinpoint the areas that need to change immediately so that the following steps can be supported by observational studies, root-cause analyses, on-the-ground discussions, and other techniques. Methods such as 5-Why, fishbone diagrams and other qualitative methods are used, and quantitative analysis, if available, can be used to support this analysis.

2) Example use of the environment analysis phase

The SLF repair process is mapped according to the current processes and DT implementations in the physical facility on the data, application, and technology levels. The five application-level areas are mapped as follows:

1) **Value-creation:** The SLF repair process relies on manual labor throughout its value-creation process. Certain spare parts, including supplementary compartments and repair kits, are ordered and stored. These items are 3D printed in batches for chair kits and on-demand for supplementary compartments. Printed SOP cards guide employees at each station, and a whiteboard is used to manage and synchronize the process by displaying orders.
2) **Labour management:** Employee times and tasks are assigned manually. A paper sign-in system is used to calculate shift times. There are designated safety areas using yellow floor lines, and protective wear is mandatory.
3) **Apparatus management:** Special tools required for unique repairs are controlled using a sign-in system at the storage reception. Employees are responsible for their own tool management and are provided with a precision bit set used to dissemble and assemble the trains. There is a working 3D printer in the facility, but also several old and unused pieces of equipment which should be removed/re-assigned.
4) **Inventory management:** The facility uses a delivery note system, where manual orders for repair kits and specialised parts are taken for repairs by the assigned employee. All spares management is audited by manual counting, and units are tracked using paper tags with their assigned job numbers. Access to spare parts storage is limited to reception employees. The storage area is locked with a coded door, kits are ordered in batch orders, and unique spares are ordered on a requirements basis.
5) **Product management:** There are no digital methods used in product management. Manual quality control is conducted with paper checklists to ensure all parts are in the unit. The process is designed only to repair two types of trains; no product design is required, and 3D printed parts are done using CAD.

On the data level, there is no online management system used in the repair process. The facility uses traditional data collection methods, such as work sampling, time studies and observation, to collect the data used for line-balancing and other process modelling. Performance management is also done using traditional lean calculations such as cycle time, takt time and OEE, which are calculated manually. Traditional MS office is used.

On the technology level, there is a 3D printer. The only software used in the repair process is CAD for 3D printing instructions and MS office for performance analysis.

In step 3 conventional goals setting tools such as SMART goals are used and in step 4 a task team, consisting of a company engineer, operation manager, quality controllers and a team of middle managers is created. Step 5 concludes the environment analysis phase by conducting an as-is analysis based on qualitative data (quantitative can also be used if available). Here methods such as root-cause analysis, 5-Whys and brainstorming can be used broadly to analyse the environment, where their results are used in the next phase.

B. Low-Level Transformation Phase

The first phase of Digital Transformation in this roadmap is to identify, select, test, use and analyse lower levels of digital or technological support in the labour-intensive environment considering all the results of the previous phase.

1) Phase description

The method for this roadmap is incremental. Based on the environment analysis, the next phase in the roadmap is to identify, pick, and execute potential digital or technological support methods. Before moving on to higher levels of digital or technological support, this roadmap phase chooses lower levels of support to evaluate the DT process, interaction, and cause-and-effect relationships from the implementation in the environment, particularly with the labour force. Additionally, the application of lower levels of DT support methods can meet the requirements above easily, affordably, and with little disruption, depending on the user drivers, strategic goals, and DT goals. The results of the analysis phase are used to select an area from the RA and define its area-specific DT goals. A Pareto analysis, a tool for decision-making on and prioritising competing problems in the user firm's operation [11], can be used to rank the outcomes of qualitative analysis and select the most apparent area and subarea. A sub-area is then picked, and basic DT goals such as increased data collection capacity, or process improvement can be selected.

Finding potential digital or technological solutions to the outcomes of the preceding steps, specifically for the chosen user environment area(s), is the first step in the actual transformation. A mind map methodology, using the various elements of the RA, are developed to identify potential forms of DT support, the steps are as follows:

1) **Reference architecture area selection:** The relevant part of the application level in the reference architecture, after environment analysis, is selected as the centre point for its own two technology mind maps, with its sub-areas serving as subbranches.
2) **Architecture relationship branches:** Each sub-branch is broken down into further branches of data collection, data management and technology application.
3) **Root causes, challenges and opportunities:** For the selected subbranch, the various challenges, opportunities, or cause-and-effect relationships are listed. These subbranches indicate specific processes where various digital or technological support methods can be added to collect data and improve the process.
4) **DT brainstorming:** Utilising research and brainstorming techniques, solutions in the form of digital or technological methods of support are found to address the challenges or opportunities in the form of Digital Transformation.

After selecting a suitable test-bed solution, the actual implementation is visualised on the process, and its potential impacts in cost, resistance to change and on the other areas of the RA, is documented and assessed, where-after the solution is implemented.

Evaluation of the current process is the last step in the roadmap's low-level digital support phase. The roadmap's outputs define the subsequent actions the user organisation should take in their roadmap-based approach to DT. The new and enhanced process must be assessed to ascertain whether the transformation is effective, similar to step 5. To determine how the process improved, the task team would employ quantitative and qualitative methodologies in this situation. After reviewing each implementation, the task team must choose the following stage in their DT project. They can choose to revisit low-level implementation in other environments, keep re-formulating higher DT goals for each area, or stop the transformation process if the task team and management deem it appropriate for the time being. The decision depends on their strategic and specific area goals.

2) Example use of the low-level transformation phase

The first increment of the roadmap starts with step 6, where a Pareto analysis is conducted on the SLF area, and where the value-creation area is deemed to be the area with the most recurring qualitative challenges, based on step 5 and illustrated in Fig. 4. A Pareto analysis is done using cause-and-effect diagrams based on qualitative analysis in the SLF, where challenges are listed and counted in the Pareto and the amount of root causes are used to count the impact of each application area on the SLF. The value-creation process, i.e., the actual manufacturing or repair process, is the most affected in a labour-intensive environment. It has the most challenges in data collection and transformation hesitancy. More specifically, the actual labour-intensive repair process is selected as a sub-area from the reference architecture.

The low-level mind map, seen in Fig. 5 illustrates the methodology used to identify a potential to-be on the RA by identifying potential methods of digital or technological support based on literary works such as those by Oztemal and Gursev [12] and Lasi H, Fettke P, Kemper HG, Feld T and Hoffmann M. [13]. The mind map is developed as follows:

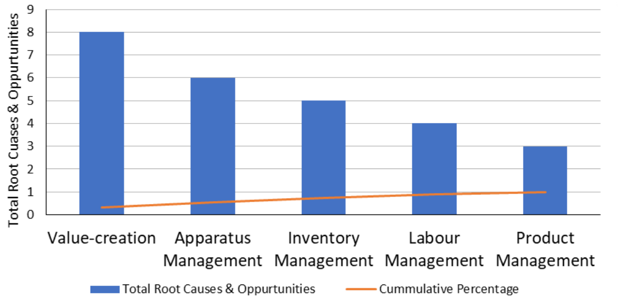

Fig. 4. Pareto analysis as conducted in step 6 of the low-level DT phase.

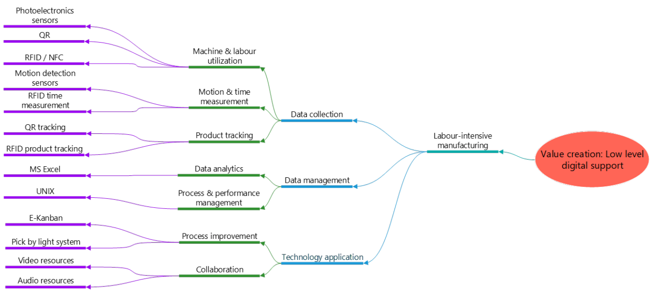

Fig. 5. Low-level technology mind map development on labour-intensive manufacturing in the value-creation application area.

1) **Data collection**: The mind mapping methodology is used to select the first subbranch of a labour-intensive process, which commonly lacks transparency due to variation in labour and supporting processes [12]. Implementing a tracking system using RFID and QR technologies can help track products, calculate efficiency, determine cycle times and variations, and increase transparency. Photo-electronic sensors for material flow tracking and motion sensors to calculate productive times are also potential DT support methods.
2) **Data management**: To manage data collected in the SLF where there is no current data management infrastructure, MS Excel or MS Access can be used for analytical and database creation, including manual data from a time-study for Excel analysis.
3) **Technology application**: Physical technology, such as digital lean tools and human-CPS collaboration, can improve various areas in the value-creation process. Lean manufacturing methods reduce waste and improve a company's responsiveness [2, 14], which can be digitalized at a low-level using visual or audio aids. Video or audio guides can also aid in training and standardization processes in the repair process, creating a low-level of human-CPS collaboration.

From the developed mind map, a low-level RFID solution is picked and developed to enable the tracking of units throughout the SLF facility. The solution uses a NodeMCU microcontroller, RFID reader and buzzer, and units are equipped with RFID tags. When a unit is assigned to a workstation, a Google spreadsheet receives the unit's time stamp, which includes the date, time, and unique job number. In step 8 of the roadmap, the impact of the implementation is where the impacts on the area and other areas are noted, and the implementation is updated on the RA. In addition, when in actual use the cost-benefit proposition of such an implementation would be evaluated in detail to determine the implementation's suitability. Step 9 implements the solution.

After analysing the solution, a degree of tracking is made possible so that anyone with access can know where a unit is in the value-creation process, depending on the tag-in times of the unit at a workstation. The RFID tracking system also enables the recording of unit cycle times, facilitating variation analysis and standardisation calculations. Additionally, the implementation enables a line manager to identify the stations that take the longest to create value. With additional study, line-balancing and waste management concepts can be developed to improve the efficiency of the repair line.

After deeming the implementation managed and sufficient, another low-level implementation on the roadmaps is revisited, where a portable motion sensor system, using an Arduino UNO, RFID tag-in system and MS Excel data-streamer enabled PC is used to calculate productive times on the different stations, used to determine which workstation is the least efficient, and where future methods of support can be implemented.

This solution enables line managers to further analyse and determine station downtime analysis and unsupervised productive time analysis and is more aimed at capturing time spent away from the workstation. This data collection method allows for more in-detail tracking and transparency and can be used to collect data that is to be used in additional implementations.

With increased transparency, and low-level implementation in place, the labour-intensive process can be advanced in the roadmap, and a higher-level concept is presented to the group of middle managers.

C. High-Level Transformation Phase

The following phase of the incremental roadmap relies on the findings, analysis, and knowledge obtained by the user environment from the lower levels of digital support methods to deploy higher, more extreme, and disruptive levels of digital or technological support methods.

1) Phase description

To deploy higher and more extreme and disruptive levels of digital or technological support methods, the following phase of the incremental roadmap builds on the findings, analysis, and knowledge gathered by the user environment from the lower levels of digital support. The results of the preceding ten steps are combined for each chosen area to generate new DT goals and the outcomes of the previous area's implementation are used to identify a higher-level implementation. The mind-mapping methodology gets an additional step in the higher-level phase, where the choice of new higher-level DT support methods is made using the currently available data from any prior transformation iteration. Methods effectively applied in the past can now be expanded to improve the process further. The outcome of the analysis of the first transformation is then used to decide on other DT support methods by adding a fifth methodical step:

Advanced DT solution brainstorming: More advanced support methods are identified after analysing a previous implementation, either based on the previous set of solutions or the root causes and outcomes of step 3.

Here the middle management input is especially critical to any identified methods, as higher levels of DT support methods are often more disruptive. A bottom-up input can aid in limiting the disruption, guiding the research and implementation of the task team, and testing the potential relationship impact of the implementation within the environment. The remaining steps of the high-level transformation phase remain the same as the low-level phase. The high-level digital support phase of the roadmap ends with an evaluation of the current process. The outputs of the roadmap are used to determine whether the user organisation should continue with its roadmap-based approach to DT or declare the transformation successful. If successful, the task team can restart the roadmap and pursue other methods of DT in a continuous incremental innovation cycle.

2) Example use of the high-level transformation phase

As RFID and PIR tracking has now been implemented in the environment, a more advanced solution can be implemented based on low-level implementations. The previous steps concluded that a higher form of data collection and transparency in the environment could build on the previous implementations. More advanced forms of RFID or IoT systems are identified in the technology mind map in Fig. 6.

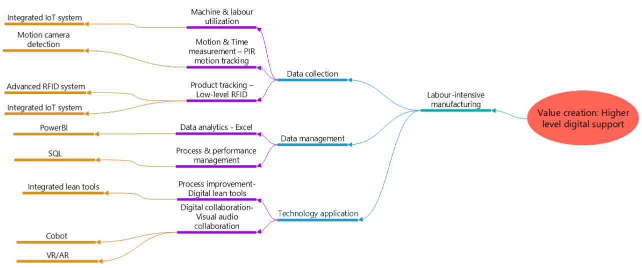

Fig. 6. High-level technology mind map development on labour-intensive manufacturing in the value-creation application area.

The mind map is developed as follows:

1) **Data collection**: Building on the potential outcomes of the low-level DT support methods, higher-level methods can increase tracking and transparency even more. Advanced RFID systems can build on the previous infrastructure. This is also an example of how an implementation on a particular area or sub-area would impact others, as an IoT system would also increase the digital abilities of data management.
2) **Data management**: After incorporating a certain level of data management, where the environment's stakeholders have grown accustomed to working with data management technologies, the task team can acquire a Power-Bi or SQL system, which has more advanced capabilities.
3) **Technology application**: AR, VR, and advanced digital lean methods are all examples of support methods that can be implemented.

A research partner developed an ultra-high-frequency RFID (UHF RFID) solution demo for the repair facility. This solution attempts to track every part of the process and allows for real-time management of these parts using digital touch screens. All readers are long-range, with up to 9 meters of parts RT parts tracking. If properly developed, the system enables full real-time tracking of labour-intensive value-creation and provides a real-time view of parts, components, and final goods. Additionally, it improved the environment's inventory management's security and control. The response of the workforce will also determine how successful the deployment is.

This includes their attitude towards the implementation, including how willing they are to work with it, and if any concerns are brought up by representatives due to the implementation.

Step 15 would take all of this into consideration. After a successful implementation, when the repair process's transparency and data collection have improved, the roadmap is restarted, and another area or subarea is considered for DT.

D. Continuous Improvement Cycle of the Roadmap

The roadmap makes use of a continuous improvement methodology. The concept comes from the Japanese term Kaizen [15]. Continuous improvement is a cycle, that requires involvement from all parties in an organisation and is aimed to improve and to do so the organisation should focus on eliminating wastes and identifying new areas of improvement [15]. Continuous improvement enhances a firm's competitiveness, boosts efficiency and productivity, and elevates customer satisfaction [16]. Iteratively improving different operational aspects can result in financial benefits, including increased profits and cost savings [16].

1) Cycle description

Continuous improvement is integrated into the roadmap design with three feedback opportunities offered to users in each of the three phases: environment analysis, lower-level DT support, and higher-level DT support. The inclusion serves two purposes: to test innovations and to enhance value-creation within the labor-intensive environment. When the task team has completed their DT journey, the roadmap recommends returning to step one to re-evaluate the environment, redefine drivers, and restart the roadmap.

2) Example use of the continuous improvement cycle

Researcher 1 tested different DT support methods in the SLF during use case experiments and validated the roadmap. The first iteration of continuous innovation involved adding data collection through motion sensors before transitioning to UHF RFID. The roadmap is then restarted, selecting the labour-intensive process and implementing digital lean tools on the least effective workstation. The second transformation is successful, leading to a third iteration focusing on quality improvement in product management. A digital quality checklist and OpenCV-enabled quality check system are used to determine part quality.

V. Conclusion and Discussion

This paper proposes a practical approach to Digital Transformation for labour-intensive organizations, utilizing a roadmap with three phases and 15 steps to incrementally implement digital or technological solutions. The roadmap incorporates a continuous improvement cycle, and it was presented to experts and tested in a replicated repair facility and with a group of middle managers. It was found to be a suitable approach for labour-intensive organizations. A working roadmap was produced for medium-sized labor-intensive environments, and it can also be used by digital consulting agencies for smaller organizations.

Conflict of Interest

The author declares no conflict of interest.

Author Contributions

All authors listed have significantly contributed to the development and writing of this article.

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