

# The Leadership of Small and Medium Businesses in the Industrial Revolution 4.0

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Due to the fast-paced and sophisticated nature of the Industrial Era 4.0, micro and small business leaders are required to keep abreast of the current era. Indonesia is currently in the midst of the 19<sup>th</sup> pandemic disaster, where the number of sufferers is increasing. Addressing this, the government is providing policies for companies to implement work from home solutions. This is a challenge for leaders to manage their employees to remain productive even though they are working at home. The purpose of this article is to conduct a literature review to find out what kind of leaders can support the small and medium business environment in the era of the Industrial Revolution 4.0. The literature review is conducted to determine the leadership styles in the Industrial Era 4.0. Various information from journals and online news has determined that the leadership style that supports the small and medium business environment (SMEs) in the Industrial Era 4.0 is digital leadership. Digital leadership is very important for SMEs because leaders are required to be able to run business strategies quickly related to digital technology in an ever-changing market. The use of technology enables SMEs to identify markets. Digital leadership can explore how information technology (IT) can be used to help SMEs become more responsive to customer needs.

**Key words:** *Industrial era 4.0, SMEs, digital leadership.*

## Introduction

At this time, we enter the next era of the Industrial Revolution, which has been identified as the era of the Industrial Revolution 4.0. This situation is fast and sophisticated, where we can access information quickly and anywhere (Ramadhan, 2018). Today many people, especially business people use internet access to reap profits by doing business *online*. Not infrequently too, now many people prefer to go through business *online* by opening a store

*online*. Coupled with the impact of the COVID-19 pandemic, many people in the world are worried, including in Indonesia. Some countries are quarantining and limiting social activities by maintaining physical distance between one individual and another individual. This also gives a sense of anxiety itself. This anxiety affects individual activities in making purchases or shopping (Supriyanto, 2020). This phenomenon triggers people to prefer shopping *online*. This can be used by businesses, especially micro and small businesses to sell *online*. Several *platforms* that can be used by businesses include Shopee, Tokopedia, Bukalapak, Lazada, and so on.

Not only does it affect people's behaviour, the spread of the virus also impacts companies. The number of people infected with the coronavirus or COVID-19 continues to grow, so it is possible for companies to be appealed by the government to make their employees work from home if conditions require it (BCA, 2020). Along with the appeal, there are several companies that have implemented *work from home* for their employees, namely, Gojek, PT, Taman Impian Jaya Ancol, PT, Astra International, Tokopedia, PT Unilever Indonesia Tbk (UNVR), and some companies from the banking sector (Anggraeni, 2020). In response to this, leaders need to review and ensure each employee understands the team's goals, the role of each individual, and how each person contributes to an outcome. The leader also has to ascertain whether there is a job or role that changes, if there is it must be well communicated to the whole team. Because it is not routine to meet face-to-face in the office, leaders must schedule time for virtual joint meetings. Thus one another can provide the latest data or information to each other and ensure all employees are still in the same position. Leaders must also specify how many times in one week to have a joint meeting. When not communicating directly, the potential for miscommunication and misunderstanding will be even greater. Leaders can develop communication strategies to reduce this happening from the communication channel to the channel used (BCA, 2020).

A leader must be able to keep abreast of the current era so that they can lead an organisation well. This will allow the organisation to progress and develop in accordance with the vision and mission of the organisation (Ramadhan, 2018). As is the case with the leader or owner of an SME, a leader must be able to behave in this way. The owner must keep abreast of current technology where most people have switched to digital technology. Digital technology has changed everything that not only happens in the field of information technology, but also the style of leadership and how to manage organisations. This rapid technological development changes the traditional leadership style into digital leadership. A digital leadership has the ability to inspire employees to innovate and defend these ideas. Sharpness in applying digital leadership benchmarks shows a fast, cross-hierarchical, cooperative, and team-oriented approach that often integrates innovation above all else (Sarjito, 2019)

Organisational leaders are recognised as the most powerful contributors to creating a positive culture and reward system in building users' knowledge, skills, and attitudes so that organisations are successful in the digital market (Avolio et al., 2014). This digital revolution led to increased flexibility in production, increased speed, a new dimension of mass production, an advanced level of productivity, superior quality results, and new business models that emerged. Industry 4.0 focuses on the following main principle: transparency of information and networks (machines, devices, and people can communicate and exchange with each other). Industry 4.0 affects all business areas because companies need virtual and physical structures that allow collaboration between machines, devices and people, and rapid adaptation along the value chain (Oberer & Erkollar, 2018). One of the main challenges facing SMEs leaders today is how to optimally integrate business systems and information technology in their organisations to fully utilise the potential of digital technology (Ferneley & Bell, 2006). Not surprisingly, SMEs leaders are able to effectively align business and digital strategies more successfully to succeed. (Avolio et al., 2001).

Based on the background description above, it can be concluded that a leader is required to be able to keep abreast of the times which are sophisticated and fast. Leaders must be able to manage their employees in various situations such as the existence of government policies to implement *work from home*. In response to this phenomenon, research on leadership styles that support micro and small businesses in the Industrial Era 4.0 is interesting to be explored further.

## Literature Review

### *Industrial Revolution 4.0*

Industry 4.0 and the *Internet of Things* (IoT) have become one of the most talked about industrial business concepts in recent years. Since the first Industrial Revolution came after the steam engine, the next radical changes have occurred, among others, digital machines and automatic manufacturing environments which have had a significant effect on productivity. The main drivers of this radical change are individualisation of demand, resource efficiency, and short product development periods. Companies now face challenges in making quick decisions to increase productivity. One example is the process of transformation to automated machines and services, which require coordination and connection of complex systems that are distributed. For this purpose, more software systems are embedded in industrial products and systems. Thus, predictive methods must be based on intelligent algorithms to support electronic infrastructure (Lee & Lee, 2015; Dananjaya & Sedana, 2020; Sari & Giantari, 2020).

Hermann et al. (2015) added that there are four industrial design principles in Industry 4.0. *First*, interconnection (connection), namely, the ability of machines, devices, sensors, and people to connect and communicate with each other through the *Internet of Things* (IoT) or the *Internet of People* (IoP). This principle requires collaboration, security and standards. *Second*, information transparency is the ability of information systems to create virtual copies of the physical world by enriching digital models with sensor data including data analysis and provision of information. *Third*, technical assistance which includes: (a) The ability of an aid system to support people by consciously combining and evaluating information to make the right decision and solve an urgent problem in a short time, (b) The ability of the system to support humans by performing tasks that are unpleasant, too tiring, or unsafe, (c) Includes visual and physical assistance. *Fourth*, decentralised decisions which are the ability of virtual physical systems to make their own decisions and carry out tasks as effectively as possible. There are four stages of the industrial revolution as Sun (2018) argues as follows:

- a) The first Industrial Revolution took place between 1750-1870 and was marked by mechanisation, steam power, and water power. Entrepreneurship focuses on creating new markets and creating work systems (on the production floor)
- b) The second Industrial Revolution took place between 1870 – 1980 and is marked by mass production lines, assembly lines, & electricity. Entrepreneurship focuses on mass production and international national trade
- c) The third Industrial Revolution took place between 1980 - 2011 and was marked by computer automation. Entrepreneurship focuses on digitalisation and multi-national companies
- d) The fourth industrial revolution is currently taking place and started in 2011. This revolution characterised by cyber physical systems, the internet of things & robotics, cloud computing, cognitive computing, and big data. Entrepreneurship focuses on business interconnection, smart automation, drones and more.

### ***Digital Leadership***

Sandel (2013) defines *digital leadership* as abilities and capacities that can provide an environment of creativity by optimising technology and digital capabilities. Digital characteristics are leaders of creativity, leaders who inspire, leaders of credibility, leaders of broader knowledge, leaders who are collaborative and interactive and trust subordinates.

*Digital leadership* is referred to as a process of social influence mediated by information and communication technology to produce changes in behaviour and performance with individuals and groups in an organisation (Chua & Chua, 2017; Sawaka & Ramantha, 2020; Putra & Suwandana, 2020). *Digital leadership* is designed to produce changes in the performance, thoughts, feelings, behaviour, and attitudes of groups or individuals and to

provide guidance in achieving common goals (Avolio et al., 2014). In fact, digital leadership involves increasing organisational member relationships to enable work to be mediated using technology. This means that communication, information gathering, and information dissemination occur through information technology, as opposed to traditional leadership, which focuses on face-to-face interaction. By using technology, leaders can lead from a distance and interaction is done only through technological means (Li et al., 2016).

According to Burke, the roles that must carry out *digital leadership* are: a) *Visionary*: Having the ability to see the big picture and translate it to members of the organisation, b) *Convener*: Having the ability to manage member differences and bring the organisation toward clear goals and problem solving, c) *Team sponsors*: Have the ability to form and direct real working groups and virtual groups, d) *Managers*: Have the ability to seek and allocate organisational resources with full responsibility, and the ability to manage real and virtual organisations, e) *Innovator*: Having the ability to find new ways for jobs outside of their main duties and functions, f) *Mentors*: Have the ability to guide and direct prospective new leaders in the organisation (Anwaruddin, 2009; Pemaun & Yasa, 2020; Andini & Sukartha, 2020).

Sahjaya and Rao (2018) define four factors that can influence leadership in the digital age, namely, Emotional Quotient (EQ), Intellectual Quotient (IQ), Digital Quotient (DQ), and Personal Quality (PQ). Today's business leaders need a high IQ + EQ level. Successful leaders will also own and practice the qualities of *Digital Quotient* which means that they can quickly adapt and change their company by injecting digital capabilities into the organisation. Measurement of the nature of emotional intelligence tends to show higher validity than measurement of emotional intelligence based on ability in leadership. Leadership is a social skill in the nature of emotional intelligence. In this research leadership in the digital age is registered with factors such as EQ, IQ, DQ and PQ listed above leading to company performance. Like the EQ factors are self-awareness, emotional resilience, intuition, interpersonal sensitivity, influence, motivation, and awareness that influence leadership which leads to company performance. Likewise the IQ factor is critical analysis and assessment, vision, and imagination and strategic perspectives that also lead to company performance.

Digital leadership is a person who is able to drive successful innovation and take advantage of advances in information and communication technology. With adequate e-leadership skills, it is believed that it will drive economic growth and create jobs through its main role in identifying and exploiting opportunities for innovation. Digital leadership expertise encompasses competencies that enable one to start and guide Information Technology and Communication (ICT) innovations at all levels of the company from the beginning to the big company, from private to public. Digital leadership is a businessman and digitally savvy, and shows the ability to lead strategically. They are leaders by implementing Information and

Communication Technology (ICT) because they truly understand digital. Digital leadership involves leadership and management professionals who are trained in the field of e-skills as well as other professionals. Digital skills of leadership can be divided into three domains, as shown below (Hüsing et al., 2015; Kusuma & Darma, 2020; Subawa et al., 2020).

**Figure 1.** Digital Leadership Triangle



Figure 1 shows the three domain skills that digital skills, business skills and strategic leadership skills can be determined more by mentioning skills exemplifies digital leadership in these fields. The need for digital leadership skills varies somewhat across various industries, company sizes, and life cycle stages. Also because the dynamics of technological development in ICT (although perhaps to a lesser extent, in entrepreneurship and management science) will develop over time. Digital leadership skills are a combination of adequate numbers and skill levels from all three domains. (Hüsing et al., 2015; Jaya et al., 2020; Satriawan & Setiawan, 2020)

### ***Small and Medium Enterprises (SMEs)***

According to Presidential Decree No. 99 of 1998, the meaning of Small Business is: small-scale people's economic activities with the business sector which in majority is a small business activity and needs to be protected to prevent unfair business competition. SMEs in Indonesia are very important for the economy because they contribute 60% of GDP and accommodate 97% of the workforce.

Small and Medium Enterprises (SMEs) according to Law No. 20 of 2008 is divided into two terms, namely: small businesses are entities that have a net worth of more than Rp

50,000,000.00 (fifty million rupiah) up to a maximum of Rp 500,000,000.00 (five hundred million rupiah) not included land and building of business premises, as well as having annual sales results of more than Rp 300,000,000.00 (three hundred million rupiah) up to a maximum of Rp 2,500,000,000.00 (two billion five hundred million rupiah). A medium-sized business is a business entity that has a net worth of more than Rp 500,000,000.00 (five hundred million rupiah) up to a maximum of Rp 10,000,000,000.00 (ten billion rupiah) excluding land and buildings where it operates, and has a yield annual sales of more than Rp 2,500,000,000.00 (two billion five hundred million rupiah) up to a maximum of Rp 50,000,000,000.00 (fifty billion rupiah). According to Tohar (1999), in his book *Making Small Business*, the definition of small business from various aspects is as follows:

a) Based on total assets.

Small-scale entrepreneurs are entrepreneurs who have a maximum net worth of Rp 200,000,000, excluding land and buildings where businesses are opened.

b) Based on total sales.

Small-scale entrepreneurs are entrepreneurs who have a maximum net sales / year of Rp. 1,000,000,000.

c) Based on ownership status.

Small entrepreneurs are businesses in the form of individuals that can be incorporated or not incorporated, including cooperatives.

## Research Method

The research approach used in this article is qualitative research with descriptive research type. Here the researcher describes the leadership style that supports the small and medium business environment (*SMEs*) and is relevant when applied in the industrial era 4.0. Data collection techniques in this article are through the study of literature derived from news *online*, previous journals, and books related to research problems.

## Discussion

The leader is a person in charge and has the obligation to regulate the running of an organisation in order to be able to build and become an organisation in accordance with the vision and mission of the organisation. The success of an organisation is not only in the performance of its staff but also most importantly in the competency factor possessed by the leader (Ramadhan, 2018). At the organisational level in certain markets, digital leadership can make a company successfully take advantage of its own digital assets to gain and maintain competitive advantage. Digital leadership is willing to explore how information technology (IT) can be used to help organisations become more responsive to customer needs and change business requirements. Successful digital leadership understands the importance

of, and is responsible for, incoming data and processes within the company that support it, as well as outbound digital information that companies produce in the various ecosystems in which they participate (Sarjito, 2019).

In various sectors regardless of organisational size, companies change their workplaces into digital workplaces. As Haddud and McAllen have observed, there is currently a lot of work that involves extensive use of technology, and requires the ability to exploit it quickly. However, digitalisation is perceived as a destroyer and creator of global jobs, which drives a large transformation of job requirements. As a result, leaders need to invest in improving employees, in an effort to support and motivate them in facing steep learning curves and cognitive challenges that are highly demanding. As such, the leadership role has become important to capture the real value of digitalisation, especially by managing and retaining talent through better achievement, connecting, and engaging with employees (Cortellazzo et al., 2019).

Boesenberg (2019) suggests that there are seven characteristics of digital leadership, namely responsibility, results, information distribution, goals and judgments, errors and conflicts, change, and innovation.

- a) Responsibilities: digital leadership learns how to distribute tasks according to the situation and competence of the team, where the ability of managers together with employees is continuously linked. Success means all participants contribute to the network of intelligence competencies. Assignment of tasks is a digital leadership way to ensure goals are achieved.
- b) Results: digital leadership controls the voting process and discourse, evaluates tasks, and results together with team members. Digital leadership also uses resources according to potential and competence (cross-functional and cross-hierarchical). Practical results are generated by integrating constant feedback between internal and external stakeholders.
- c) Information distribution: digital leadership creates a transparent framework, relying on "*collectable debt*" of self-responsibility and proactive behaviour.
- d) Objectives and assessments: assess employee performance individually in the cycle of staying within the traditional manager's comfort zone. The situation determines the need to assess employees and teams equally by digital leadership, with constant exchange/feedback.
- e) Mistakes and conflicts: rules that result in violations to avoid mistakes are the hopeful paths that traditional managers take before conflicts occur. An open atmosphere with the effect of learning on mistakes is supported by digital leadership, which places the company's own responsibility for solutions in the foreground.
- f) Change: maintaining a budget, stable quality, and minimised risk are priorities for traditional managers, leaving little room for creativity. The energy of a digital leadership

sustains a high level of willingness and ability to change within the company while intentionally promoting and encouraging high agility between markets, customers, and employees.

- g) Innovation: a digital leadership knows that innovation is based on team focus on a common goal to make the best use of each individual's abilities. Innovation can be learned. This is helped by changing old structures through the use of multidisciplinary teams, flexible work environments, and creative processes.

Digital technology has an influence not only on the field of information technology but also on how businesses are managed and what leadership styles are applied. *Digital leadership* is leadership in the Industrial Era 4.0. Not every leader in a technology company demonstrates digital leadership. An important element that determines digital leadership is organisational goals (the ability to move from a fixed cycle to assess employee performance, to the ability to understand that the situation determines the need to assess employees and teams equally, with the ability to implement feedback routines). Additionally, digital leadership must focus on people ( the ability to distribute tasks based on team situations and competencies, linking the ability of managers and employees to form competency network intelligence), change (high-level will and ability to change, fostering high-level agility between markets, customers, partners and employees, and deliberate promotion ), and output (the ability to control processes, evaluate tasks and results together with the team; to use resources according to competencies - cross-hierarchical and cross-functional - instead of controlling orders, resource plans, and evaluating results within the boundaries of a project, as done do it by traditional leaders), mistakes and conflicts (an open atmosphere with the effect of learning in mistakes and collaborative atmosphere to deal with conflict situations), communication (ability to create a transparent framework for information distribution, relying on collectible debt from employees and teams, responsibilities self-responsibility, and proactive behaviour) and innovation (knowing that innovation can be learned, able to change old structures through the use of multidisciplinary teams, and creative processes and flexible work environments) (Oberer & Erkollar, 2018).

*Digital leadership* is a social effect by information technology to make changes in position, feelings, thoughts, behaviour, and performance with individuals. (1) *digital leadership* is significantly related to building organisational trust and commitment from virtual teams. (2) The three dimensions of *digital leadership* (engaging, implementing, and elastic) significantly predicted organisational commitment (3) building trust significantly increasing the effect of *digital leadership* on organisational commitment (Iriqat & Khalaf, 2018). SMEs face a variety of challenges in adopting ICT in their business such as the need for financial, technical and consulting support. When business leadership decides to change their traditional SME business processes to digital form, it will most likely face resistance to change that requires vigilance about managing conflicts that might arise through change.

SMEs leadership must have knowledge of the right ICT strategies to ensure the success of their business by adopting e-commerce. The lack of expertise and internal resources where SMEs leadership requires support from governments and other authorities to turn their traditional businesses into new digital businesses is among the common challenges (Sumanasiri, 2019).

Mkinga (2018) states that there is a high need for *digital leadership* in project management performance based on technological change and improvement. Digital leadership support in time and cost management while electronic leaders need relevant knowledge and skills through training and seminars to meet effective project management. In addition, more investment is needed for applications to make *digital leadership* effective in management performance. In addition, clear goals and visions for *digital leadership* are needed because they increase motivation, ownership, and trust. Finally, *digital leadership* acts as a basis for project planning, decision making, and effective use of technology in public institutions.

Belitski and Liversage's (2019) research on *digital leadership of SMEs* in the city of Johannesburg, South Africa, found that *digital leadership is* seen as a tool for new knowledge and commercialisation of new products. Combining technology, business and management skills, it will be easier to connect with customers, recruit employees with relevant skills (manage people), receive feedback from customers and be better involved in developing new products (managing customers). In addition this will assist in transferring information with suppliers and their customers throughout the manufacture and delivery of products (information exchange). The critical challenge faced by SMEs leaders, as digitisation continues, is how to adopt digital technology to create value and enable faster product commercialisation. There is little empirical research that examines how digital leadership in SMEs drives the technology and process of commercialization of new products in developing countries.

The attitude of SMEs leaders is an important factor in adopting ICT in the SMEs business. Awareness and understanding of SMEs leaders about the benefits and relevance of ICT encourage the effective application of ICT in SMEs. Also, the role of the leader in business and its capacity to learn, change, and apply ICT within existing dynamic capabilities is a major factor that ensures the success of SMEs (Sumanasari, 2019). For example, the study of Cloete et al. (2002) explains that most CEO in SMEs want to adopt ICT in their business. Most SMEs leaders are motivated to adopt ICT (such as the Internet) in their business activities because it facilitates communication.

Research Li et al. (2016) states that there are three qualities of digital leadership namely agile leadership, architectural views, and digital entrepreneurship. This research found that agile leadership (agile culture, strategy and proactivity) is very important for SMEs to be able to

run business strategies quickly related to digital technology in an ever-changing market. The architectural view is also found to be an important quality of digital leadership because it transforms technology and organisational infrastructure into collaborative platforms for optimal human resource management and external alliances, given the limited resources of SMEs. In addition, digital entrepreneurship is the main leadership mechanism especially when digital technology is used as an enabler to inspire business innovation.

SMEs use ICT to commercialise their products to increase their sales revenue and win the competition to produce superior performance. ICTs will be able to improve the ability of SMEs to compete with large-scale competitors, enabling SMEs to develop locally and internationally. The use of e-marketing in particular enables SMEs to identify the broader market. The SMEs leadership identified that it was very important in adopting ICT in the SMEs business. Adopting ICT for the benefit of the organisation can reduce costs, increase efficiency, improve customer service and increase customer loyalty. Other specific benefits, such as cost minimisation, self-marketing, and new product launches, will motivate SMEs leaders to increase their involvement with ICT (Sumanasiri, 2019).

The application of digital leadership as a skill in SMEs is very important to win customers in today's market. Therefore, government agencies and policy makers must consider programs that communicate and promote digital leadership learning as skills. They must facilitate the development of practices that give SMEs easier access to technology-based training. Access to cheaper or subsidised technology must be a more focused proposition, in which policy makers apply price pressures to data and technology suppliers to shape lower entry prices. Digital leadership in SMEs must be involved in the support tools available through online education such as those offered by open online courses. This can be achieved through partnerships that connect government support initiatives with SMEs and universities on their journey to commercialisation. For example, SMEs can join a local university network (Belitski & Liversage, 2019).

A supportive leadership style in small and medium business environments is *digital leadership*. *Digital leadership* is a fast, cross-hierarchical, team-oriented and cooperative approach, with a strong focus on innovation. The personal competence of leaders, their mindset and their ability to apply new methods and instruments such as design thinking, are important dimensions for Leader 4.0 (Oberer & Erkollar, 2018). *Digital leadership* encourages successful alignment between business and digital strategy. This is very relevant because most SMEs are touched by the digital revolution (Li et al., 2016).



## **Conclusion**

Based on the review of the discussion above, it can be concluded that the leadership style that supports the environment of small and medium enterprises (SMEs) in the Industrial Era 4.0 is digital leadership. Digital leadership is very important for SMEs because leaders are required to be able to run business strategies quickly related to digital technology in an ever changing market. The use of technology enables SMEs to identify markets. Digital leadership can explore how information technology (IT) can be used to help SMEs become more responsive to customer needs.

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