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PROBLEMS AND CHALLENGES OF IMPLEMENTATION AND MANAGEMENT OF SOCIAL ENTREPRENEURSHIP IN SRI LANKA

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Abstract. The social entrepreneurship concept has been raising the interest of people, specifically social practitioners, policymakers, media, and scholars over the past decade. Even though the Social entrepreneurship concept is recognized to be of vital importance to the economy of any country, majorly in developing countries, the scholarly contribution has been very limited. Specifically, in Sri Lanka, the notion of Social entrepreneurship is alien to the majority of the general public and even if some entrepreneurs are indeed Social entrepreneurs, they are unaware of this fact. This article provides an extensive analysis of the problems and challenges faced by Sri Lankan social entrepreneurs as they start their businesses, as well as the anticipated challenges in the future. To identify the problems of social entrepreneurship in Sri Lanka, a literature review and in-depth interviews with Sri Lankan social entrepreneurs were conducted. Based on the results of the conducted research, a model characterizing Sri Lankan social entrepreneurs and a social business canvas model have been developed.

Keywords: *challenges, implementation, management, model, problems, social entrepreneurship, Sri Lanka.*

JEL Classification: M12, M13, M14

INTRODUCTION

The social entrepreneurship concept has been raising the interest of people, specifically social practitioners, policymakers, media, and scholars over the past decade. It is a globally discussed phenomenon, and as the awareness of the concept increases so does the number of social entrepreneurs and social enterprises around the world. When we take a look at the global statistics, it is evident that most of the powerful nations have recognized the importance of this concept and are encouraging citizens to come up with social enterprises. For example, in European Union, one out of every four new businesses established are social venture. Entrepreneurs are being recognized all around the world for inventing new business models or innovatively conducting their businesses. Similarly, when it comes to the notion of social entrepreneurship, they too engage in novelties like Commercial Entrepreneurs. However, the difference between these two entrepreneurs lies in the generation of value. Social entrepreneurs are more concerned about deriving social value whereas commercial entrepreneurs think about maximizing economic value. In addition to this idea, social entrepreneurship can also be defined as the concept of practicing entrepreneurship with a triple bottom line: profit, social benefits, and environmental aspects, or rather as a theory that operates with a

triple bottom line, that is, social value maximization, environmental conservation and wealth creation as a means of social value maximization.

Sri Lanka is a lower-middle income generating country with a population of 21 million people and has been categorized as a developing country after the end of the 30-year-long war in 2009. Since then, the country has adapted many strategic development plans to uplift the economic conditions of people. These initiatives certainly set the foundation for many small-scale businesses to erupt all over the island, out of which a considerable number have social elements embedded in the business model. However, due to the lack of regulation on these small-scale businesses in the social entrepreneurship category, it is hard to find relevant statistics on social entrepreneurs in Sri Lanka. As the idea of social entrepreneurs, social entrepreneurship, and social enterprises is alien to most developing countries, including Sri Lanka, the authors identified the gap in general knowledge of these concepts and their practice among the Sri Lankan population and thought of answering this gap by providing a qualitative study on the topic. Since the number of people following this concept in their organizations is quite low in figures, the study would not be limited to a specific geographic or demographic area of Sri Lanka and also to one specific industry.

The aim of this study is to bridge the gap between knowledge on social entrepreneurs in Sri Lanka by identifying their main problems, challenges, motivators, and other relevant influential forces at play by conducting this research. Accordingly, the research subject of the study is Problems and Challenges of implementation and Management of Social entrepreneurship, and the research object is social entrepreneurs of Sri Lanka. The hypotheses put forward by researchers to be tested in the study are as follows:

H1: Sri Lankan Government does not play the needed role in uplifting and monitoring social entrepreneurs in the country

H2: Knowledge about the Social entrepreneurship concept is the main reason behind peoples' drive to become social entrepreneurs.

Section 1 of the study presents a literature review according to the research topic; section 2 is about the methodology used in this study to test the two research hypotheses; section 3 presents the results of the empirical analysis; the final section presents the main findings on the problems and challenges of implementing social entrepreneurship in Sri Lanka.

1. LITERATURE REVIEW

The results of the bibliometric analysis of the literature addressing the research topic identified six main clusters concerning social entrepreneurship and problems and challenges of implementation in Sri Lanka (see Fig. 1). The publications are retrieved from the Scopus database for 2005–2022.

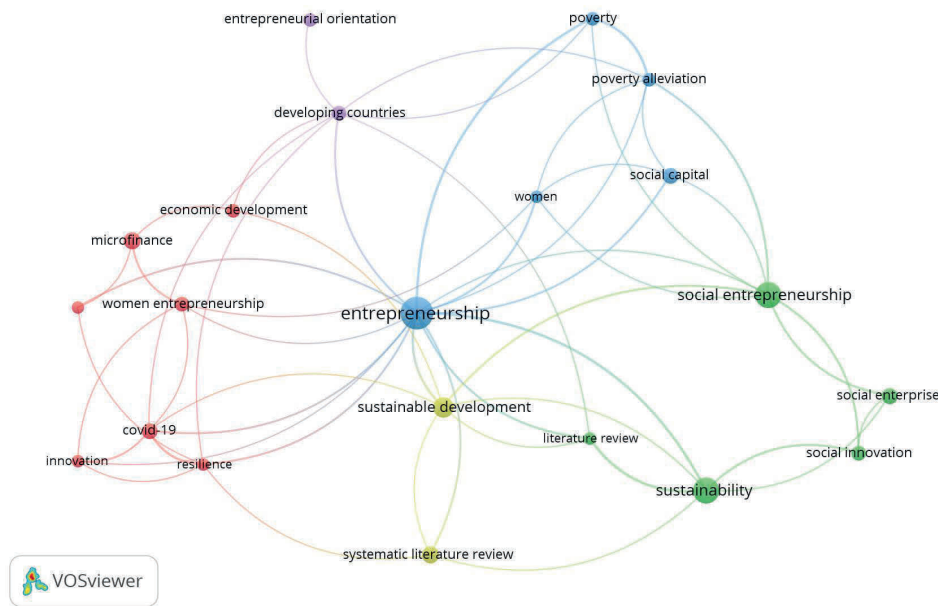


Fig. 1. Interrelation of keywords (created by the authors with VOSviewer program based on Scopus data).

We can conclude (see Fig. 1) that research related to entrepreneurship (blue) focuses on social entrepreneurship, which is the second largest cluster (green) and is related to research areas such as sustainability, social enterprise, social innovation, social capital, poverty and its alleviation, women in business and social entrepreneurship. Sustainability, on the other hand, focuses on research related to sustainable development (yellow).

By in-depth research of articles related directly to social entrepreneurship in Sri Lanka, it can be concluded that there are only 6 articles in the period from 2013 to 2022, and in addition, in 2014, 2016, 2017, 2018, 2019 and 2020 there are no articles mentioning social entrepreneurship in Sri Lanka.

Two articles from 2013 on social entrepreneurship in Sri Lanka have sustainability as important keywords. The authors emphasize that in the post-conflict period in Sri Lanka, non-governmental organizations must review the current business model and offer a new methodology for a strategy and business model that ensures financial sustainability (Kandaiya & Chavan, 2013). Social entrepreneurship in Sri Lanka faces various challenges, including failure as described in a case study based upon material from a three-year ethnography of entrepreneurship-promoting programs in Hambantota, Sri Lanka (Palmas & Lindberg, 2013).

The 2015 publication is based on field research data on opportunities for sustainable community development after disaster situations, focusing on the development of sustainable post-disaster intervention strategies and implementation guidelines, involving social entrepreneurs as well (Kaufman et al., 2015). Social entrepreneurship is important not only in dealing with natural disasters, but also with the Covid-19 crisis in Sri Lanka (Kerner et al., 2021).

The study carried out in 2022, which includes a case study analysis of sustainable coffee and tea production, includes transformation processes in this sector, focusing on issues such as sustainable supply chains, fair trade, social innovation, etc. (Bilfield, 2022). Regarding social entrepreneurship in Sri Lanka, researchers focus on social and environmental issues, and the behavioral nature of social entrepreneurship, and also emphasize that social entrepreneurship is a relatively new term in Sri Lanka (Yapa et al., 2022).

The essence of all the articles reviewed has been categorized and summarized by the researchers for easy reference in Table 1. This analysis of the articles is to get a better grasp of the existing literature as well as to form the basis of this study by identifying gaps in the existing literature to be addressed in the study.

Table 1. The base of forming research study
(created by the authors)

Many works of literature	Less/ No works of literature
Focuses on theory building and development	Instructions on a clear methodology with problems and barriers they face
Written based on theory, no practical insight into the content	Qualitative studies with in-depth interviews
Analyzes existing case studies/ papers on social entrepreneurship-related topics	How social entrepreneurs conduct social work
Systematic literature review	Motivating factors of social entrepreneurs

Taking into account the literature analysis carried out, summarized in Table 1, to identify the problems and challenges of social entrepreneurship in Sri Lanka, the qualitative method with in-depth interviews will be used in further study.

2. METHODOLOGY

For this specific study, the researchers identified the population via the Social Enterprises directory where all established social entrepreneurs of Sri Lanka have taken membership in. The directory has 30 members registered at present and these individuals were categorized as the population of the entire research as this was the only legit available source for obtaining information about social entrepreneurs of Sri Lanka (Socialenterprise.lk, 2021). It is evident that there is an uprise in social ventures within the country's boundaries but still social entrepreneurship remains an alien concept for the majority of the general public in Sri Lanka. There are several small social enterprises scattered all around the island, yet due to the lack of a proper registration procedure, it is impossible to enumerate the actual population of social entrepreneurs within Sri Lanka.

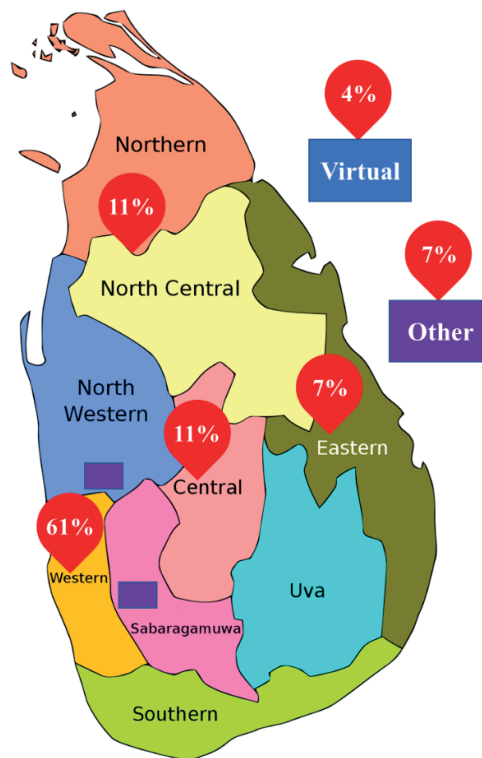
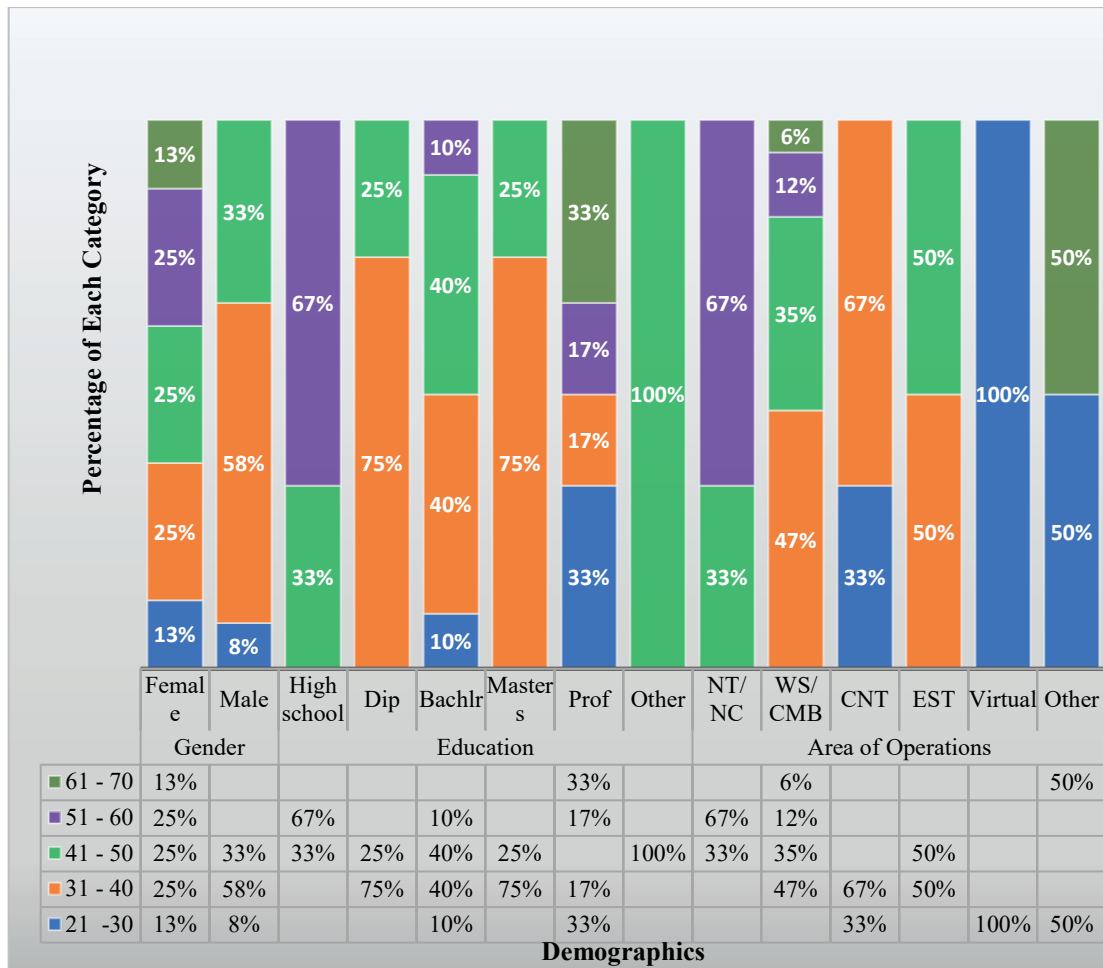


Fig. 2. Operation regions of social ventures in Sri Lanka (created by the authors).

According to the Census and Statistics of Sri Lanka, there are over a million small and medium- scale businesses (SMEs) in Sri Lanka (Central Bank of Sri Lanka, 2019). SMEs contribute up to 52 % of the GDP (Sri Lanka Export Development Board, 2021). However, most of these businesses are not registered or accounted for, which makes it hard to identify their business models and even harder to determine whether these businesses are adopting any kind of social aspect into their businesses.

Over 60% of the ventures were centered in the Western region, Colombo to be specific (see Fig. 2). This is the general norm for the Sri Lankan business world as Colombo is the commercial hub and center of economic activities within the country. The Central and Northern regions record 11 % of social enterprises mainly in the areas of Kandy, Nuwara-Eliya, and Jaffna, Anuradhapura respectively. This is an interesting development for the country as these 2 areas were highly affected by the civil war extending from 1983 – 2009, and these findings confirm that there was a drastic economic development, specifically in the social entrepreneurship sector over the past 12 years. Eastern region which was also a war victim area has recorded 7 % of social venture operations while another 7 % of social entrepreneurs were scattered in North Western and Sabaragamuwa regions. The other interesting finding was that there were 4 % of virtual social enterprises based in Sri Lanka which the researchers did not anticipate before the data collection period (see Fig. 2).



Abbreviation	Dip	Bachlr	Prof	NT/NC	WS/CMB	CNT	EST
Definition	Diploma	Bachelor	Professional	North/ North Central Region	Western Region/ Colombo	Central Region	Eastern Region

Fig. 3. Overview of all demographic factors based on age group (created by the authors).

Figure 3 is a representation of all the above-mentioned demographic characteristics of social entrepreneurs based on their age group categorization. There were 5 age groups of social entrepreneurs 21 – 30, 31 – 40, 41 – 50, 51 – 60, and 61 – 70. The researcher then analyzed the gender, educational background, and area of operations of these social entrepreneurs based on the age category they fall into. For example, the social entrepreneurs with a high school education background consisted of 33 % from the age group 41 – 50 and 67 % from the age group 51 – 60. When we look at the constituents of virtually operated Social Enterprises, 100 % of them were social entrepreneurs in the age group of 21 – 30. Based on the in-depth interviews conducted with Sri Lankan social entrepreneurs, the reasons for starting and continuing social entrepreneurship were ascertained (see Fig. 4).

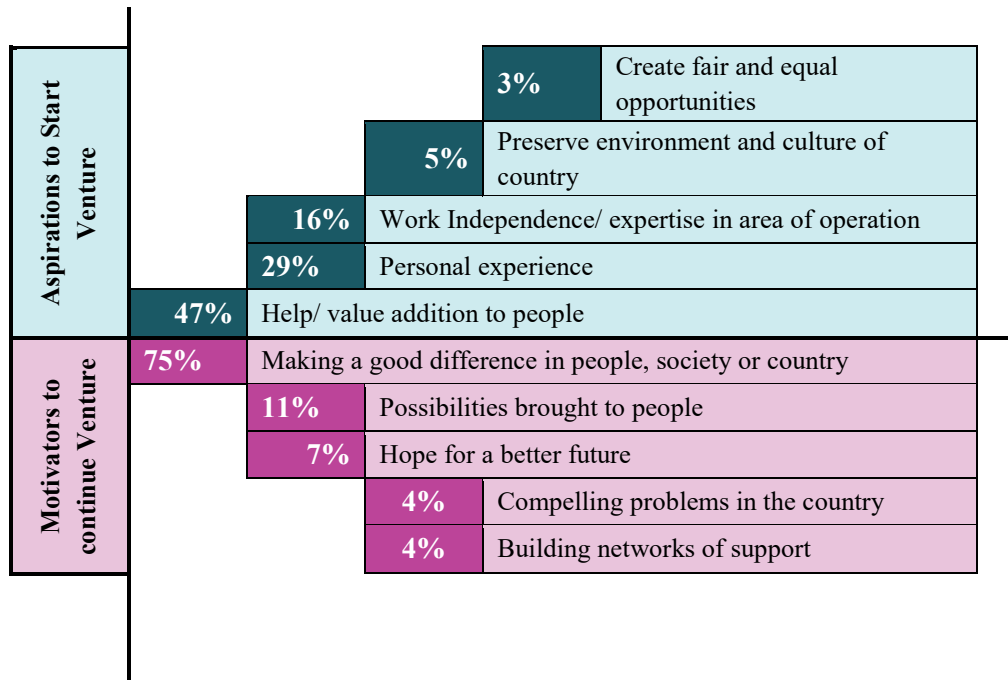


Fig. 4. Aspirations and Motivators behind Social venture Start and Continuation (created by the authors).

For the majority of social entrepreneurs (47 %), the desire to start a social business arises from the need to help or add value to someone else in any possible way. When looking at what motivates these social entrepreneurs to continue their work, the highlighting factor at 75 % of all social entrepreneurs was seeing the good difference they made in the lives of people they served, in the society and country at large.

3. RESULTS

Figure 5 shows the results of the literature review and interviews conducted with social entrepreneurs, compiled into a social enterprise business canvas adapted to the Sri Lankan situation. The business model canvas integrates all the sample respondents' social business aspects and it is an overview of the essence of all these social entrepreneurs' business concepts and activities in the country. The business model canvas is a tool developed by the Social Enterprise Institute to assist in the planning, communication, and refinement of a business model in a simple, visual manner (Social Enterprise Institute, 2021). The Canvas Model includes 5 main aspects applicable for any and all Social Enterprises so that it captures all angles of the business organization: mission of the social venture; implementation factors; value created; market aspects; financial components.

The Social business model canvas starts by listing the mission of the social venture and goes on to other aspects of the business from there. As shown in Figure 5, these social entrepreneurs' mission was to fill a social gap in the country that was not addressed by the commercial entrepreneurs or the government and social services sectors. Next, the canvas model focuses on the Implementation part of the business highlighting who are the key allies, key resources, and key activities of these social ventures. The next part of the canvas is about Value creation, as social innovations and value propositions are generated by these ventures.

The final component of the canvas is the Finances divided into 3 main parts Costs, revenues, and community reinvestments (see Fig. 5). Figure 6 shows the analysis of common problems and challenges of social entrepreneurs in all 3 operation stages (start, present, and future) along with an overall ranking of these problems.

MISSION				
IMPLEMENTATION		VALUE	MARKET	
<ul style="list-style-type: none"> Platform to match demand and supply for quality products and services, volunteers, other Social Entrepreneurs Create income sources for outcasted, underprivileged, disabled people Innovative education models for kids, youth and vocational trainers Invent business practices with environment consciousness 				
Key Allies <ul style="list-style-type: none"> Family, friends and peers Donors and well-wishers Suppliers of raw material and services Social organizations helping with the cause 	Key Resources <ul style="list-style-type: none"> Capital Employees Property and equipment Know-how and expertise 	Social Innovation <ul style="list-style-type: none"> Innovative business models Newly defined employee groups Uncommon target groups 	Customer Relationships <ul style="list-style-type: none"> Sri Lankans in need of help (kids, youth, women, disabled) People who are willing to help Environmentalists Community in general 	Channels <ul style="list-style-type: none"> Word of mouth Loyal customers Social media advertising Programs in institutes Memberships in web directory Campaign launches Media partners
	Key Activities <ul style="list-style-type: none"> Product / concept development Product manufacturing Service delivery Training employees Sales and marketing Keeping social motive intact 	Value Proposition <ul style="list-style-type: none"> Working towards a good cause Ethical work believes High quality products Creating ripple effect Recognition and goodwill 	Consumer Benefits <ul style="list-style-type: none"> Education Economic opportunities Quality products and services Environment friendly practices 	
FINANCES				
Cost of Delivery <ul style="list-style-type: none"> Raw material Needed equipment and facilities Venue, property charges Salary of employees Logistics expenses Sales and marketing expenses 		Community Reinvestment <ul style="list-style-type: none"> Income opportunities Better education opportunities Quality products and services Preserve environment 	Revenue Streams <ul style="list-style-type: none"> Commercial profits from social venture Other parallel businesses of Social Entrepreneur Donations and grants 	

Fig. 5. Social Business Model Canvas (Structure from: Social Enterprise Institute, 2021, Content created by the authors).

When looking at the overall values, 3 out of all 4 common problems and challenges (see Fig. 6): managing stakeholders; culture and skepticism; disengaged government, appear to be the biggest problems and challenges social entrepreneurs had, have and expect to face in the future with only slight changes in their value.

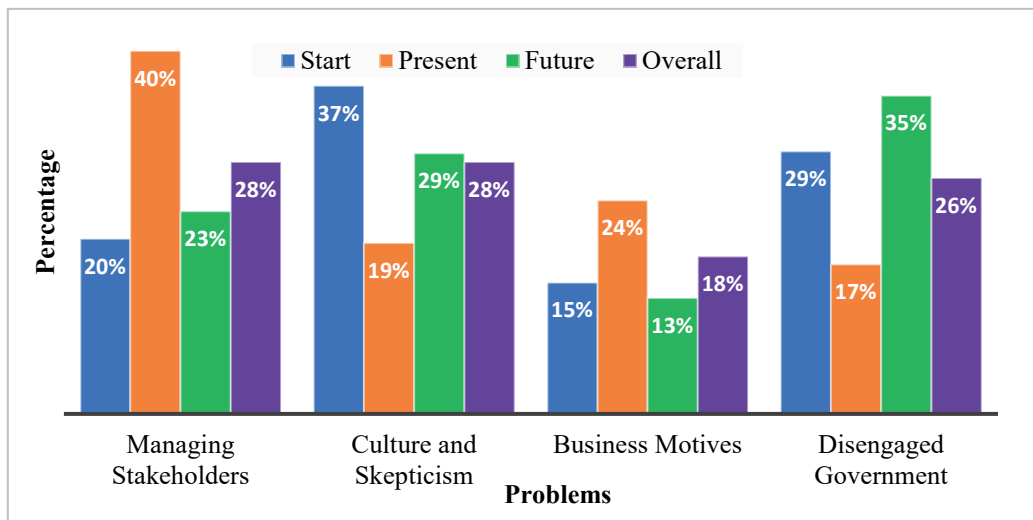


Fig. 6. Overview of common problems at each operating stage (created by the authors).

As the next step of data collection on problems and challenges of implementation and management of social ventures in Sri Lanka, the researchers asked the respondents to rank ten common problems iterated in their interviews by looking at them from their company perspective and then from the perspective of the country (see Table 2).

Table 2. Ranking of social venture problems by Individual and Country perspective (created by the author)

Problems	Individual	Country
Skepticism of people (frauds/ scams)	1 st	3 rd
Lack of Institutes/ policies for Social ventures	2 nd	6 th
Lack of initial capital or investor pool	3 rd	4 th
Social and Cultural Barriers in Country	4 th	5 th
Lack of Government Support	5 th	1 st
Ignorance of social problems	6 th	2 nd
Unawareness of Social entrepreneurship Concept	7 th	7 th
No proper market mechanism for Social ventures	8 th	8 th
Poor management of social mission + profits	9 th	9 th
No work-life balance	10 th	10 th

Since lack of government support came up in many interviews and was ranked as number 1 in country problems, the researcher did an in-depth analysis of what actions are most expected from the government for the social entrepreneurship sector. The respondents listed 4 main actions expected from government: regulations, policies, institutions and funds; taking actions on social problems; protection of country resources; assistance to rural communities. After analysis of the data collected, the researchers were able to come up with a model which describes the average social entrepreneur in Sri Lanka. The model shows that there are 2 underlying traits of entrepreneurs which is essential for a social venture (see Fig. 7).

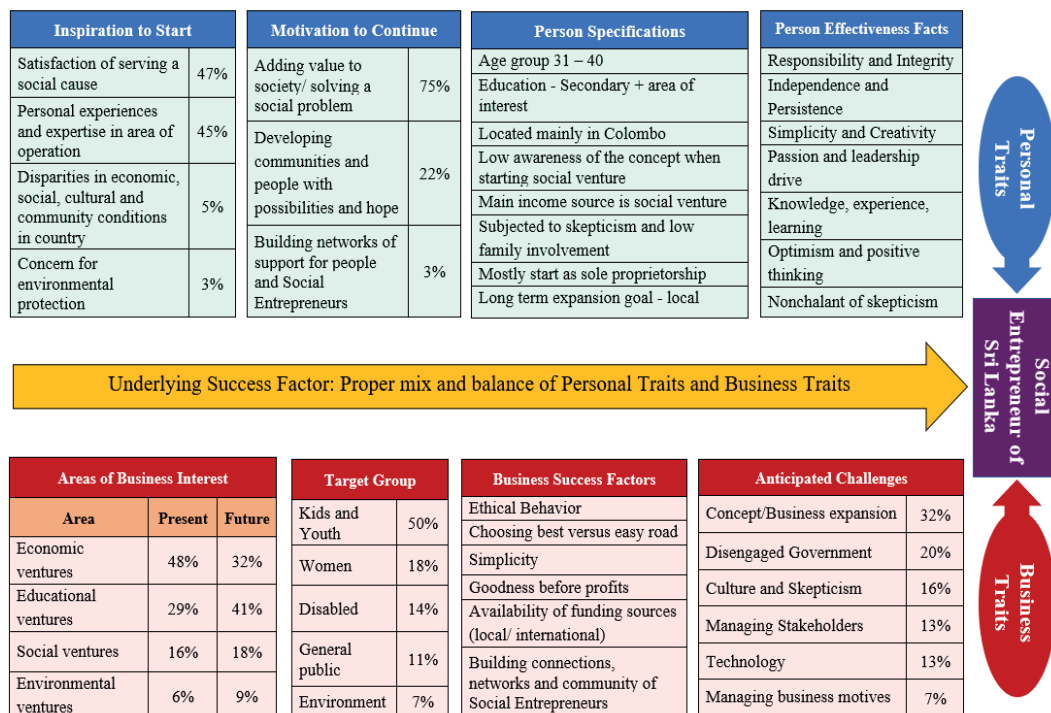


Fig. 7. Model of Social entrepreneurs in Sri Lanka (created by the authors).

These two traits of a social entrepreneur's success are Personal traits and business traits (see Fig. 7). Personal traits illustrate the social entrepreneur's characteristics such as his or her inspiration points, motivation factors, persona specification, and effectiveness attributes which are most relevant and compatible with social entrepreneurs in Sri Lanka. The business traits, on the other hand, show the most important factors and determinants of a social entrepreneurial venture when we look at it from a business perspective such as business interest areas, target group, success factors, and challenges to anticipate in the future. The percentages given against each factor denote the weightage of each of these attributes for the creation of social entrepreneurs as per the data collected through this research.

CONCLUSION

The analysis of research data concluded that hypothesis 1 is accepted and hypothesis 2 is rejected due to the following reasons: hypothesis 1 was accepted as 54% of respondents in total mentioned this as the main problem in all 3 stages of business; start, present, and future. In addition to this, the respondents ranked not having proper government support and monitoring as the number 1 problem in the country; hypothesis 2 was rejected as it was revealed by analysis that 54% of respondents were not aware of the social entrepreneurship concept when they started their business and only after operating for some time they got to know about the concept and that their business model is indeed a social venture. From the author's point of view, Sri Lankan social entrepreneurs have done tremendous work in the social entrepreneurship realm considering the low awareness and facilities available for them within country boundaries.

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ECONOMIC ISSUES OF BLOCKCHAIN USE IN BUSINESS: CHALLENGES OF INDUSTRY 4.0

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Abstract. Today's world is developing at a fast pace, and new technologies appear every day, the use of which is aimed at improving people's lives. Industry 4.0 involves automation of all processes and stages of production and helps to increase interconnectivity. In this context, blockchain is one of the most promising technologies, which in recent years has confirmed its effectiveness due to the increase in the profits of companies that use it. This technology makes it possible to significantly reduce the costs of companies, especially those that are participants in the stock market. Blockchain ensures high stability and consolidation of positions in the market. At the same time, blockchain is capable of changing the payment ecosystem by improving the efficiency of financial transactions around the world. With its help, it is possible for companies to reduce data processing costs and increase the volume of information flows. The article analyzes the advantages and disadvantages of this technology, its prospects, and steps to implement blockchain in business. The purpose of the research is to investigate the level of use of blockchain technology by Ukrainian companies and to consider existing global examples. The advantage of using blockchain technology is that it allows a company to record both sides of a transaction simultaneously in a shared ledger in real-time, rather than simply keeping verified records of financial transactions in separate privately created databases or ledgers. The main drawback of blockchain technology is the lack of a single regulatory framework regulating the use of this technology.

Keywords: *blockchain, business development, digitalization, Industry 4.0.*

JEL Classification: O36, M21

INTRODUCTION

Industry 4.0 is significantly changing the way businesses produce, improve and distribute their goods. A variety of new technologies appeared due to the Fourth Industrial Revolution. For example, blockchain technologies are already used in various fields of economic activity. It can be emphasized that the blockchain has gone beyond the sphere of cryptocurrencies and is being actively implemented in various spheres of business activity. The volume of expenses for the development of blockchain technologies, according to experts, amounted to 4.1 billion US dollars at the end of 2020. Therefore, the growth of the blockchain technology market is 50 % higher than in 2019. This fact looks impressive against the background of the coronavirus pandemic and the resulting decrease in economic activity in most traditional industries. There is a possibility that the pandemic has become catalyst for blockchain technologies, but this issue needs to be studied further. If analysts'

estimates turn out to be correct, and the industry continues to grow at a rate of 45 % per year, then by 2024 the number of expenses for the development of blockchain will amount to \$17.9 billion (Ellis et al., 2020).

At the moment, the volume of blockchain spending reaches only 0.1 % of the IT market, which cannot be considered a significant indicator (Kimani et al., 2020). But the absolute number is significant, and if we consider that the IT market has existed for more than 50 years and the blockchain technology market is just forming, and if we compare the above estimates of the growth of the blockchain market, we can emphasize that the implementation of blockchain in various fields of activity is an interesting and relevant subject of scientific research (Gartner, 2021).

The peculiarity of blockchain technologies lies in their transparency, security, integrity and, most importantly, in the fact that it is practically impossible to falsify. This, in turn, opens an endless stream of new opportunities for humanity in the field of economy and security. Big data storage, medical technology, instant money transfers abroad, electronic voting at the state level, means of exchange and accounting are different opportunities of blockchain. Today, society is just beginning to realize the scale and value of this technology, and scientists predict a big boom in the development of blockchain technologies in a few years. There is a high probability that thanks to the implemented technologies, traditional banking schemes will be completely pushed out of use. However, at the nascent stage of technology, it is still quite difficult to unambiguously predict its impact on the development of the world economy in the future. Therefore, the novelties in the IT market, namely blockchain technologies, their implementation in business and the optimization of all possible processes with their help, require further research.

The purpose of the study is to investigate the level of use of blockchain technology by Ukrainian companies and to consider existing global examples. Following the purpose of the research, following objectives can be outlined:

- to define the concept of blockchain and its key principles;
- to figure out the main advantages and drawbacks of the blockchain technology.
- to analyze the impact of blockchain on companies in Ukraine and all over the world.

1. LITERATURE REVIEW

Though the role of blockchain for Industry 4.0 is growing, there are still not enough scientific publications concerning this issue. Ellis S., Jewell J., Speer J.K. predict that if the industry continues to grow at a rate of 45 % per year, then by 2024 the volume of costs for the development of blockchain technologies will amount to \$17.9 billion (Ellis et al., 2020).

The Boston Consulting Group (BCG) predicts that the volume of the digital economy may reach \$16 trillion by 2035 (GeSI, 2012), and according to estimates by the World Economic Forum (World Economic Forum, 2018), digitalization has enormous potential for business and society and may bring to the world economy by 2025 year in addition to more than \$ 30 trillion income. Other authors wrote that the blockchain is a distributed database technology based on an ever-growing chain of records (Iansiti & Lakhani, 2017; Frizzo-Barker, 2020).

Some authors highlighted the main principles of blockchain (decentralization, security, transparency, immutability), as well as the main tasks in business that can be solved by blockchain technology (Pisarenko, 2012; Demirkan et al., 2020). Usenko A. singled out the

main shortcomings of blockchain technologies: irreversibility of transactions, lack of legal regulation of blockchain operation, "Attack 51" (Usenko, 2018; Beck et al., 2017).

Therefore, the relevance of the topic increases the demand for new researches in the field. Our study will make the contribution to the existing knowledge by considering practical issues of blockchain use in business in the context of Industry 4.0.

2. METHODOLOGY

In our study, a variety of research methods was used. We analyzed a lot of sets of textual or visual data collected from scientific literature and other trustworthy sources. The comparative analysis was utilized to figure out the differences in blockchain implementation in the five world-known companies. Analysis and synthesis were also applied to determine the key advantages and drawbacks of blockchain use in business. The authors also employed the analogy method to demonstrate the similarities and peculiarities of blockchain compared to other disruptive technologies. In the research, we also provide statistical data and develop its basic analysis.

3. RESULTS

Blockchain is a distributed database technology based on an ever-growing chain of records. At the beginning of its existence, it was used in cryptocurrencies, namely in Bitcoin technology, because it made it possible to conduct chain transactions with a high level of protection against falsification and forgery or theft of data, as well as enough high speed of transaction processing (Iansiti & Lakhani, 2017). The main innovation of the blockchain is the ability to create not only something related to cryptocurrencies but any service based on this technology. Blockchain-based business models may vary, but nevertheless, they all share important attributes such as transparency, security, integrity, and efficiency that set them apart from all other technologies. The following principles of blockchain technology are distinguished: decentralization, security, transparency, and immutability.

According to these principles, blockchain technology allows solving many tasks in business (Pisarenko, 2012):

- compromise when concluding an agreement with unreliable parties.
- there are few risks in blockchain technology. The algorithms are built in such a way that each block is linked to the previous one and when a new one is added (which is confirmed by each participant), the register is automatically updated;
- reduction of commission costs.
- blockchain technology significantly reduces business costs due to the absence of intermediaries;
- ensuring complete confidentiality.

To break the blockchain, you need access to the millions of computers involved in the network. It is technically almost impossible to do this. If we consider the application of the blockchain in the organizational and management activities of the enterprise, then the blockchain is a rather convenient tool for storing and distributing information (not only financial).

One of its advantages is that the decentralization of data storage provides greater reliability (security) than in the case of a centralized system (Usenko, 2018). Due to the

decentralization of storage, the reliability of the data transmission system is increased, the receipt of information by all interested parties at the enterprise does not require a centralized server, allowing to preserve information exchange even in the event of a temporary failure of the server equipment.

Also, an important advantage of blockchain technology in the field of data storage is its protection against possible modification due to the protection due to the very nature of the blockchain: the next added block cannot be changed afterwards. Thus, the main direction of non-financial use of blockchain technology at the enterprise is information support of the enterprise's activities, in particular, information support of organization and management processes.

The main advantages provided by the implementation of blockchain technologies are shown in Fig. 1.

Security of transactions	<ul style="list-style-type: none"> • There is little risk in blockchain. Each block of the system is linked to the previous one and cannot be removed or replaced. This means that you cannot be afraid that your counterparty will not fulfill its obligations.
Incorruptibility	<ul style="list-style-type: none"> • Blockchain is a technology. It cannot be bribed or deceived, and there is no such thing as the "human factor".
Minimum commissions	<ul style="list-style-type: none"> • Fees from many small transactions can add up to a significant amount at the end of the month. Blockchain, due to the absence of intermediaries, makes these costs minimal.
Speed of transactions	<ul style="list-style-type: none"> • Thanks to blockchain technology, it does not matter when the bank's business day ends and in which country the counterparty is located. Money transfer is made in 2-3 minutes at any time of the day.
Complete privacy	<ul style="list-style-type: none"> • Hacking the blockchain is almost impossible. For this, you need to have simultaneous access to hundreds and thousands of computers that are involved in the network. Therefore, by using the blockchain, companies guarantee themselves complete security.
Increasing trust on the part of customers	<ul style="list-style-type: none"> • Thanks to the blockchain, consumers can receive reliable data about the origin of the product, the date of packaging and the expiration date of the product, which significantly increases their loyalty to the seller.
Independence	<ul style="list-style-type: none"> • Blockchain does not depend on the political situation in different countries, due to which it opens up great opportunities for scaling.

Fig. 1. The advantages of the blockchain use (created by the authors).

The main obstacle to the use of blockchain is the extremely high degree of volatility of cryptocurrencies. Although there are examples of their use that have gained wide popularity, first of all, the \$1.5 billion purchase and the announcement of Tesla's intention to use bitcoins as a means of payment (Forbes, 2022). From this successful move and the jump in the cryptocurrency exchange rate caused by it, Tesla received a multibillion-dollar profit, which is not related to its core business and is recorded in the financial statements as non-operation income. These revenues are determined solely by the ratio of supply and demand for the cryptocurrency token.

The disadvantage of blockchain technology is the lack of a single regulatory framework regulating the use of this technology. This causes the level of trust of the users of the technology to be significantly lower. A more detailed list of shortcomings is presented in Fig. 2.

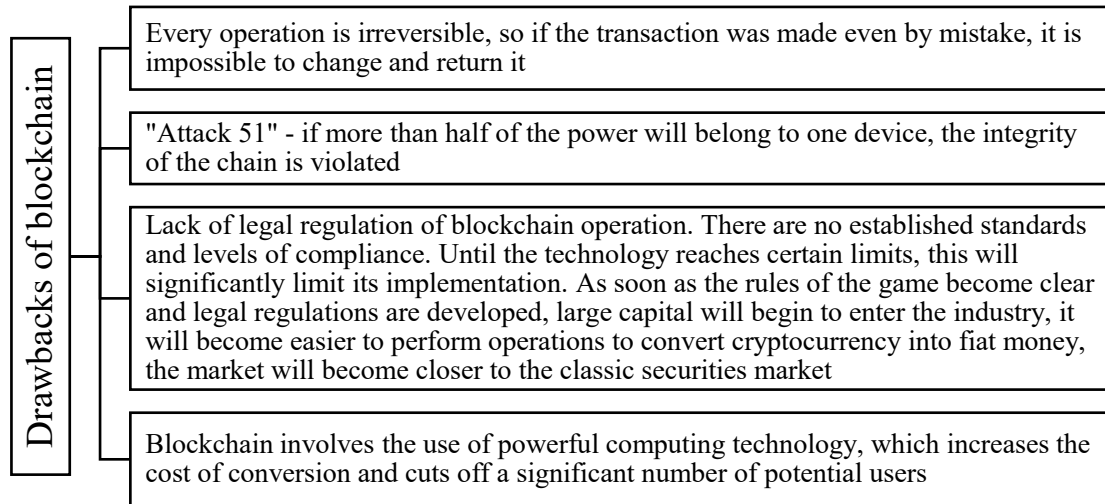


Fig. 2. The drawbacks of the blockchain use (created by the authors).

At the beginning of July 2020, the consulting company Deloitte summarized the results of a global survey and concluded that blockchain from an experimental technology is turning into a strategic priority for organizations. About 1500 senior executives in 14 countries took part in the survey, with 39 % of companies have already moved their blockchain pilot projects into production, compared to just 23 % in 2019. Moreover, 83 % of respondents in a Deloitte survey believe that they will lose a competitive advantage if they do not use blockchain. In 2019, only 77 % of respondents thought so.

The study revealed that blockchain projects are becoming an investment and strategic priority for many companies. Almost 90 % of respondents said that digital assets will become "very important" or "somewhat important" to the development of their industry in the next three years. At the same time, 82 % of respondents said that they hire or plan to hire employees who have already worked with blockchain projects (Enterprise, 2020).

Before involving blockchain technology in your business, it is important to analyze the characteristics and in general the possibility of implementing these technologies.

Any blockchain business idea should always consider three key factors:

- the value of blockchain technology;
- short-term return on investment in terms of growth;
- an individual plan for long-term action.

Many entrepreneurs are currently wondering how to correctly and expediently introduce innovative technologies into their businesses. The main steps of introducing blockchain technologies into business are shown in Fig. 3. It is important to mention that all these steps are flexible, and the team can return to any of previous stages if needed.

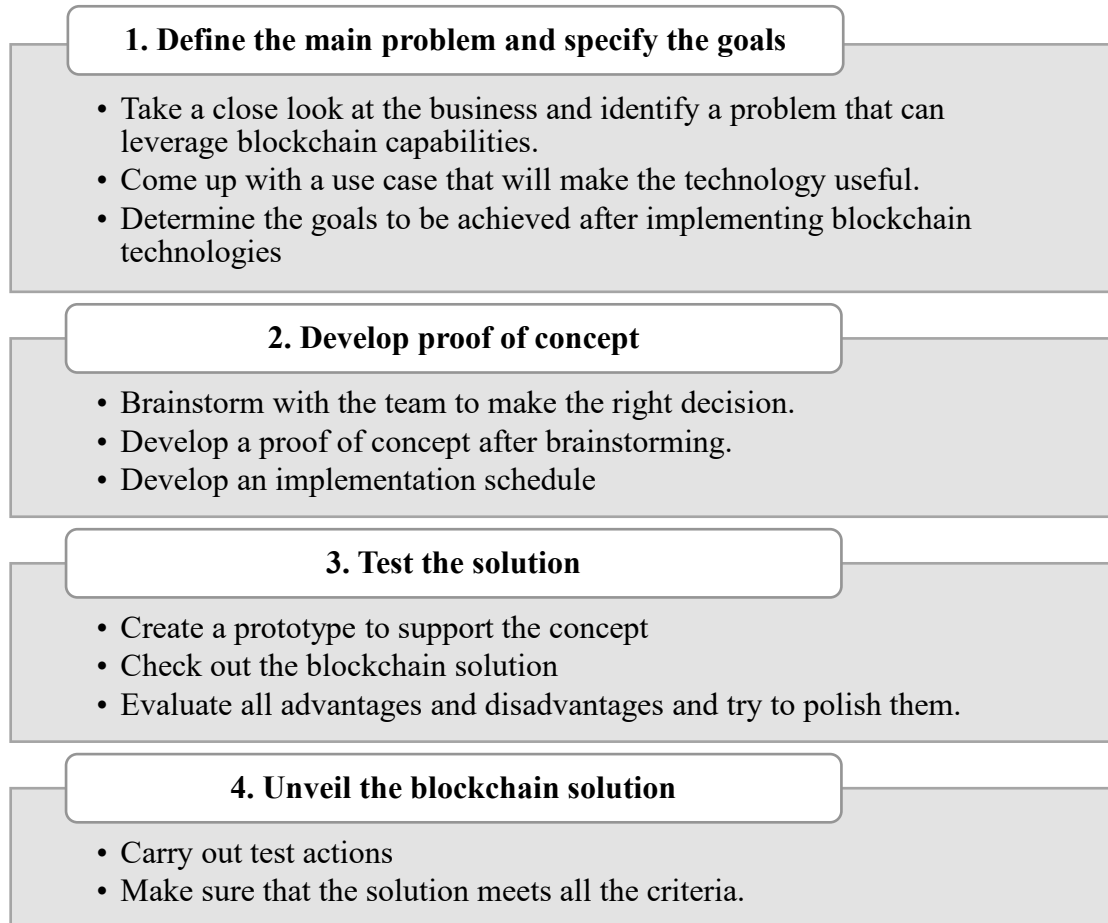


Fig. 3. The main steps of introducing blockchain technologies into business (created by the authors using (Imena, 2020).

For example, a supply chain business may initially structure its blockchain business strategy to focus on reducing operational costs. In turn, this technology can help eliminate inaccuracies in the delivery process, as well as product loss, and, accordingly, reduce the time of its delivery.

Cost reduction is one of the most important and successful short-term goals as a way to achieve a return on investment through the use of blockchain technology (Nowiński & Kozma, 2017). For greater success after involving blockchain technologies in business, it is important to use the technology for one specific issue. Instead of trying to use the technology for all activities, businesses should configure the blockchain business strategy to focus on one problem. As an example of such an application, we can describe the experience of the five largest companies on the American stock market.

Table 1. Five world-famous companies that use blockchain technology in their activities (created by the authors using (Koybichuk & Rozhkova, 2020)

Company	About the company	How it uses blockchain
Amazon	A retail company that is known throughout the world for selling mass-produced goods on the Internet	This company started implementing blockchain as one of the first in the world market. It does not only use it in its activities but also supplies its developments for the use of blockchain in other enterprises

Meta	The company has two largest social networks (Facebook and Instagram), which are popular all over the world	This company uses blockchain to protect its users, as well as for effective advertising activities
Nestle	A Swiss company engaged in the production of food products	The company uses blockchain to research the wishes of customers, analyze their individual needs and adjust production to each region, which can significantly increase profits
Oracle	The largest software developer in the world	When developing its databases, this company uses blockchain algorithms, which increases the competitive advantage of their products
Visa	The world's largest payment system.	Blockchain technology is used to reduce cybercrime and protect customers, as well as enable payments around the world, which brings additional revenue

Ukraine is also on the list of leaders in the implementation of blockchain technology in the public sector, together with such developed countries as the USA, Canada, Brazil, Australia, Israel, UAE, Georgia, Estonia, the United Kingdom, France, Germany, and Sweden. Implementation of distributed ledger technology began in 2016 and is gradually gaining momentum. It is expected that soon, new blockchain-based projects will appear in both the public and private sectors because the introduction of information technologies into the activities of economic entities will significantly modify the business processes of their information provision and management. According to official statistics, 95.5% of enterprises in Ukraine use computer technologies in their activities; 32.8% of the average number of employees use computers and 82.6% of them have access to the Internet; 98.1% of enterprises have access to the Internet (Rada, 2018). Therefore, Ukrainian companies have significant opportunities in blockchain adoption and overall business digitalization.

CONCLUSION

Industry 4.0 changes the way companies and national economies function. New disruptive technologies, including blockchain, are quite promising because of a variety of opportunities they offer. Managers will not have to hire a large staff of employees to collect all the necessary information. Also, companies will not have to spend a lot of money on the purchase of consulting services. All this will lead to the fact that organizations will have more free money at their disposal, which they can direct to the development and expansion of business, and this will have a very positive effect on the Ukrainian economy in general. In addition, there will be an opportunity to eliminate potential violations in the tax field.

Today, in Ukraine, blockchain has found its application mainly in the financial sphere. Thus, on its basis, the register of bank guarantees works. This register accumulates and provides information on issued bank guarantees and serves the provision of new guarantees. In addition, on the basis of blockchain technology, a register of transactions with securities has been created. With the help of this register, reports on concluded agreements are compiled.

Therefore, blockchain is an important modern achievement, the scope of which is constantly expanding. Caution in the use of blockchain technologies is due to the need to further study the risks of their operation and the peculiarities of adaptation in the conditions of the national economy. Despite a large number of advantages, not all possible features of

the blockchain have been fully explored. But it is possible to confirm the effectiveness of the blockchain and predict a great future for it.

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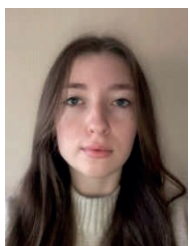


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