## Chapter 6

# DIGITALISATION IN SMES: THE ROLE OF ORDER MANAGEMENT AND SOLON TRADE ERP SYSTEM 

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## INTRODUCTION

The rapid advancement of technological developments in today's business world requires businesses to focus on digitalisation to gain competitive advantage and ensure sustainable success. In this context, small and medium-sized enterprises (SMEs) are of great importance for the economy of every country. SMEs make up a large proportion of businesses worldwide, contributing significantly to economic growth and job creation. However, despite these important contributions, SMEs face some obstacles.

Technological change can make it difficult for SMEs to maintain a sustainable life cycle. Increasing competition increases the need to improve the quality of products and services and improve business processes, while at the same time forcing businesses to adapt to these changes quickly and efficiently. Therefore, it is critical for businesses to have knowledge about digitalisation and invest in this area.

Today, the expectations of consumers are increasing rapidly. Factors such as fast delivery of products, accurate and reliable information, and easy communication are vital for customer satisfaction. Therefore, for businesses, order management plays a critical role in terms of overall quality and efficiency.

However, minor disruptions or faulty order management processes can lead to major financial losses, loss of reputation and customer dissatisfaction. To avoid such problems and help businesses maintain their competitive advantage, the transition to digital processes is essential.

This article discusses the obstacles SMEs face in digital transformation and how these obstacles can be overcome, while drawing attention to the role of order management in this transformation. It discusses how the Solon Trade ERP system

[^0]can contribute to the digitalisation journey of enterprises. This study aims to support SMEs to step into a sustainable future on a more competitive path.

## SMALL AND MEDIUM-SIZED ENTERPRISES

Small and medium-sized enterprises, also known as SMEs, are described differently in each country. Depending on the country, a company can be defined or classified as an SME based on a variety of factors.

Annual turnover, number of employees, total assets of the company, market capitalisation or any combination of these factors are usually included in the definition of an SME.

The majority of businesses operating today are SMEs. They are often small, independent enterprises with fewer than 50 employees. However, the maximum number of employees varies from country to country. The upper range for most enterprises is around 250 . Some countries estimate the total number of employees at 200 .

Small and medium-sized enterprises (SMEs) in Türkiye are categorised according to the SME definition of the KOSGEB Establishment Law. According to this definition, manufacturing enterprises with 1 to 50 employees are classified as small enterprises and those with 51 to 150 employees are classified as mediumsized enterprises.

Pursuant to Regulation No. 4778 on the definition, qualification and classification of small and medium-sized enterprises:
"Enterprises: Units or enterprises owned by one or more real or legal persons and engaged in an economic activity, regardless of their legal form." (Official Journal, 2005)
"Small and medium-sized enterprises (SMEs): economic units or enterprises employing less than two hundred and fifty employees and whose annual net turnover or financial balance sheet does not exceed forty million Turkish liras and which are classified in this Regulation as micro, small and medium-sized enterprises." (Official Journal, 2005)
"SMEs are classified as follows." (Official Journal, 2005)
a) "Micro enterprises: Enterprises that employ less than ten employees and whose annual net turnover or financial balance sheet does not exceed one million Turkish Lira. (Official Journal, 2005)
b) Small enterprises: Enterprises that employ less than fifty employees and whose annual net turnover or annual financial balance sheet does not exceed eight million Turkish liras. (Official Journal, 2005)
c) Medium-sized enterprises: Enterprises that employ less than two hundred and fifty employees and whose annual net turnover or annual balance sheet does not exceed forty million Turkish liras." (Official Journal, 2005)
"This regulation was updated by the Presidential Decree of 17 March 2022, Decree No. 5315 of 17 March 2022." (Official Journal, 2022)

The SME classification created by the new regulation is explained blow. (Table 1)

Table 1: KOSGEB SME Classification (KOSGEB,2022)

| SME | NUMBER OF EMPLOYEES | FINANCIAL CRITERIA |
| :--- | :--- | :--- |
| MICROENTERPRISE: | Less than 10 employees | 5 million TRL |
| SMALL ENTERPRISE: | Less than 50 employees | 50 million TRL |
| MEDIUM ENTERPRISE: | Less than 250 employees | 250 million TRL |

"According to the Commission Recommendation of 6 May 2003 (notified under document number C (2003) 1422), Official Journal L 124 of 20/05/2003 p. 0036-0041, SMEs are classified as "small and medium-sized enterprises (SMEs)" throughout the European Union." (Official Journal of the European Union, 2003)

The scaling according to the number of employees shows that the definitions of SMEs used by the EU and KOSGEB are consistent compared to those in the below. (Table 2)

| Table 2: SME classification table in the EU | (European Commission, 2021) |  |  |
| :--- | :--- | :--- | :--- |
| Company category | Staff headcount | Turnover OR | Balance sheet total |
| Medium-sized | $<250$ | $\leq € 50 \mathrm{~m}$ | $\leq € 43 \mathrm{~m}$ |
| Small | $<50$ | $\leq € 10 \mathrm{~m}$ | $\leq € 10 \mathrm{~m}$ |
| Micro | $<10$ | $\leq € 2 \mathrm{~m}$ | $\leq € 2 \mathrm{~m}$ |

## SME Statistics, 2021

3.568 million enterprises classified as SMEs operate in industry and services.

In 2021, small and medium-sized enterprises accounted for $99.7 \%$ of all enterprises. In contrast, they were responsible for $71 \%$ of employment, $48.3 \%$ of personnel costs, $44 \%$ of turnover, $37.3 \%$ of production value and $35.5 \%$ of value added at factor cost. (Graphic 1) (Türkiye İstatistik Kurumu, 2022)


Graphic 1: Proportional distribution of key indicators by size class (\%), 2021 (Türkiye İstatistik Kurumu, 2022)

The trade sector was the most affected by SMEs. In 2021, according to the statistical classification of economic activities (NACE Rev. 2), 36.5\% of SMEs were engaged in wholesale and retail trade, maintenance of motor vehicles and motorbikes, $14.9 \%$ in transport and storage and $12.3 \%$ in manufacturing. (Graphic 2)

SME exports accounted for $30.4 \%$ of all exports and SME imports for $14.7 \%$ of all imports in 2021.


Graphic 2: Distribution of imports and exports between SMEs and large companies in percent, 2021 (Türkiye İstatistik Kurumu, 2022)

In 2021, the dynamics of the country's trade landscape were characterized by a diverse distribution among enterprises of varying sizes. Micro enterprises played a minor role in exports, contributing just $2.5 \%$ to the total, while small enterprises and medium enterprises had more significant shares at $10.7 \%$ and $17.2 \%$, respectively. In contrast, large enterprises dominated the export sector with a commanding $69.6 \%$ share. When examining the composition of SME exports, the industrial sector accounted for $33.2 \%$, while trade was responsible for a substantial $61.3 \%$. Turning to imports, SMEs collectively made up $14.7 \%$ of the total, with micro enterprises, small enterprises, and medium enterprises contributing $0.8 \%$, $4.4 \%$, and $9.5 \%$, respectively. Large enterprises held a significant $85.3 \%$ share in imports. The trade sector heavily relied on SME imports, representing $62.4 \%$ of its total, while the industrial sector relied on them to a lesser extent, making up $31.4 \%$ of its imports. (Graphic 3) (Türkiye İstatistik Kurumu, 2022)


Graphic 3: SME export and import values (in USD billion) from 2013 to 2021 (Türkiye İstatistik Kurumu, 2022)

By 2021, the export value of SMEs will increase from 2013 at $\$ 57$ billion to $\$ 68$ billion. The value of imports decreased from 2013 to 2021 from 48 billion dollars to 38 billion dollars. (Graphic 3)
47.3 per cent of SME exports went to European countries. In 2021, SMEs exported to 47.3 per cent of European countries and 33.7 per cent of Asian countries. SMEs imported goods from $42.6 \%$ of European countries and $47.4 \%$ of Asian countries. (Graphic 4) (Türkiye İstatistik Kurumu, 2022)


Graphic 4: Distribution of SME export and import value by country group (in USD million), 2021 (Türkiye İstatistik Kurumu, 2022)
$90.8 \%$ of SME exports went to manufacturing products. The clothing industry accounted for 12.9 \% of SME exports in 2021, equipment and machinery not elsewhere specified for $10 \%$ and textile products for $9.1 \%$. Chemicals and chemical products accounted for $16.3 \%$ of SME imports in 2021, followed by equipment and machinery, not elsewhere specified (15.6\%), base metals (14.6\%) and computers, electronic and optical products (6.4\%). (Graphic 4) (Türkiye İstatistik Kurumu, 2022)

## SME All Over The World



Graphic 5: Companies based on the number of employees as a percentage of all companies (2007) (The Economist, 2011)

Small businesses have the inherent potential and capacity to evolve and transform into large-scale enterprises through strategic planning, diligent execution of innovative ideas, efficient resource allocation, fostering strong customer relationships, expanding market reach, and adapting to ever-changing market dynamics, thereby exemplifying the remarkable and dynamic nature of entrepreneurship and economic growth. (Graphic 5) (The Economist, 2011)

Researcher Catherıne Rampell publishes articles on the state of small businesses in America. As the graph from the researcher's article shows, $97 \%$ of the American economy in 2007 was made up of small and medium-sized enterprises. It is obvious that the growth rate of SMEs is the same in Japan, one of the leading industrialised countries. (Figure 1)

## Current Studies in Management Information Systems



Figure 1: Global SME concentration (Semantic Scholar, 2013)


Graphic 6: The impact of the employment rate on SMEs (2013) (Semantic Scholar, 2013)

According to the 2013 statistics in the chart above, SMEs contribute to $66 \%$ of all jobs in high per capita income countries, while they account for $78 \%$ of all jobs in low per capita income countries. The difference of $12 \%$ shows the enormous importance of SMEs in the global economy and their economic size. (Graphic 6)


Graphic 7: GDP contribution of SMEs in the EU, Japan, the USSR and China (Semantic Scholar, 2013)

SMEs account for 60\% of GDP in China, 65\% of GDP in South America, 60\% of GDP in Japan and $52 \%$ of GDP in Europe. (Graphic 7)

Small and medium-sized enterprises (SMEs) make up the majority of enterprises in the EU (99\%). They account for two-thirds of private sector jobs and more than half of the value added generated by businesses in the EU as a whole. (European Parliament, 2023)

The European Commission's intention for SMEs: 99\% of all businesses in the EU are micro, small and medium-sized enterprises. They employ nearly 100 million people and are an important source of innovation and entrepreneurship, both of which together are crucial for the competitiveness of EU businesses. The aim of the EU's SME policy is to ensure that the Union's actions and policies support small businesses and help make Europe a more attractive place to do business. (Eurostat, 2022)

The European Commission contains

- More effective rules,
- Easier access to finance,
- A focus on the internal market,
- Conditions for competition,
- Easy access to connections in the European Union,
- Research activities,
- It intends to further strengthen SMEs by adopting legislation on issues such as entrepreneurship and programmes to promote competition.

In 2019, $98.9 \%$ of EU enterprises belonging to the non-financial business economy were micro or small enterprises with fewer than 50 employees. Micro and small enterprises employed slightly less than half (48.4 \%) of the workforce in the non-financial business enterprise sector in the EU and contributed slightly more than one third ( $35.3 \%$ ) to GDP, indicating a lower economic weight in terms of employment or value added. (Figure 2) (Eurostat, 2022)


Figure 2: Key business data for the non-financial business economy in the EU in 2019 (\%, share for each enterprise size class) (Eurostat, 2022)

However, medium-sized enterprises with more than 50 but less than 250 employees account for only $0.9 \%$ of EU enterprises. Just over one-sixth of the nonfinancial business economy workforce ( $16.0 \%$ ) and about the same percentage of value added ( $17.1 \%$ ) are employed in medium-sized enterprises. (Graphic 8) (Eurostat, 2022)


Graphic 8: Relevant business statistics for the non-financial business economy (percentage, share for each enterprise size class, EU, 2019) (Eurostat, 2022)

In the non-financial business economy of the European Union, small enterprises accounted for 98.9 \% of all enterprises in 2017, followed by medium-sized enterprises (with 50 to 249 employees), which accounted for $0.9 \%$ of all enterprises. In contrast, large enterprises are defined as enterprises with 250 or more employees and account for only 0.2 \% of all enterprises. (Figure 3) (Eurostat, 2020)


Figure 3: The non-financial part of the business economy (percentage of size class according to NACE Rev.2, 2017) (Eurostat, 2020)

## E-COMMERCE

E-commerce is the online buying and selling of products and services. Customers use electronic payments to buy goods from the website or online marketplace. After receiving the payment, the merchant delivers the goods or provides the service.

Transactions in electronic commerce (e-commerce), which involves the buying and selling of goods and services and the transfer of money or data over an electronic network, usually the internet, can take place between businesses (B2B), consumers (B2C) or companies (C2B). (Business News Daily, 2023)

## E-Commerce Types

E-commerce has revolutionized the way businesses operate by connecting buyers and sellers in a digital landscape. As technology and globalization continue to evolve, international e-commerce activities have surpassed national ones, making the global market a primary trading frontier in the digital domain. When we categorize e-commerce based on the participants, we can identify six distinct types, each with its unique characteristics:

- Business-to-Business (B2B) Electronic Commerce: This involves transactions between two businesses. Typically, it might involve wholesalers selling to retailers or manufacturers sourcing materials from suppliers. Due to the volume of transactions, B2B e-commerce often involves complex supply chain management systems.
- Business-to-Consumer (B2C) Electronic Commerce: This is perhaps the most familiar to the general public. It involves businesses selling directly to end consumers. Examples include online retailers like Amazon or e-commerce platforms of traditional retailers.
- Business-to-Government (B2G) Electronic Commerce: In this model, businesses provide goods, services, or information to government entities. This could involve anything from a tech company providing software to a government department, to office supply companies equipping government offices.
- Consumer-to-Government (C2G) Electronic Commerce: This encompasses transactions between individuals and public administration. Examples include paying taxes online, renewing licenses, or any other form of e-governance services that citizens might access.
- Consumer-to-Consumer (C2C) E-commerce: This model allows consumers to trade with each other directly, typically facilitated by a third-party platform.

Websites like eBay, where individuals can sell items to other individuals, are prime examples of C2C e-commerce. (Laudon \& Traver, 2018; Turban \& et.al., 2017; Chaffey \& Ellis-Chadwick, 2019)

- Government-to-Government (G2G) Electronic Commerce: This involves transactions between different governmental bodies. It could be between different departments within a government or between different governments. This might involve data exchange, financial transactions, or any other form of digital collaboration. (Laudon \& Traver, 2018; Turban \& et.al., 2017; Chaffey \& Ellis-Chadwick, 2019)
In summary, the digital transformation brought about by e-commerce has created diverse avenues for trade and transactions, catering to various needs and scenarios in the modern world.


## E-Commerce and SMEs

The statistics show that end-user-centric e-commerce in particular has had the greatest impact on SMEs. The opportunities to develop virtual environments have given SMEs a significant competitive advantage over large companies. In the past, SMEs' biggest problem was that they had insufficient marketing resources, which prevented them from reaching their target groups.

Today, thanks to the Internet and e-commerce tools, SMEs have access to lowcost marketing channels and the ability to reach large, even global, audiences.

For SMEs, the increase in e-commerce volumes has led to higher revenues and lower warehousing costs. The cost of storage and the cost of premises in which to display products has historically been a significant burden for SMEs. Particularly big problems included rising rents and expensive advertising to reach the desired target group.

SMEs focusing on e-commerce can choose any location for their production facilities, even the most remote. Along with technological advances, the rise of digital marketing has given SMEs access to cost-effective advertising and sales promotion, and the ability to develop more precise sales tactics by better understanding their target audiences.

E-commerce has made it easier to do business. Invoices, delivery notes and order forms were often written by hand in the past; today many of these papers are created and sent electronically.

In summary, e-commerce, which is part of the global digitalisation process, has not only increased SME revenues, but also offers significant benefits in terms
of saving time in process management, reducing storage and advertising costs, reaching the right target group and analysing the target group accurately. (Graphic 9)


Graphic 9: Retail E-Commerce Sales Worldwide from 2014 to 2025 (in billion U.S. Dollars) (E-commerce Guide, 2022)

E-commerce also offers various advantages for the end consumer;

- Helps the customer save time.
- Provides customers with a personalised shopping experience.
- Reduces the potential for errors in physical warehouses.
- At the same time, it offers numerous purchasing alternatives.
- It is an environment where products can be examined and compared. (PayBull Blog, 2022)

Besides all its advantages, e-commerce also has significant disadvantages for businesses and end consumers.

- The customer cannot access the purchased item immediately.
- Not all goods can be purchased online.
- If you sell internationally, you run the risk of getting caught in a variety of tax regimes.
- You need the internet for visibility of your products.
- There is more competition.
- While a question asked in person can be answered immediately, there are communication problems online. (PayBull Blog, 2022)

Despite all the drawbacks, consumers love shopping in the virtual environment; the volume of e-commerce is developing rapidly day by day. Consumers' habits have increasingly turned to e-commerce, especially in the wake of the pandemic. This trend has also become a great opportunity for SMEs that have completed their digitalisation.

## E-Commerce Success Factors

Today, with the development and spread of the internet, the importance of e-commerce is undisputed. The most important success factor here is digitalisation.

Technological renewal and digitalisation depend on several criteria;

- Organisational structure of the company
- Qualified personnel and advisory support
- Financial resources required for technological developments
- Such as the technological requirements of large companies with which SMEs cooperate.

Globalisation and technological developments have made the digitalisation process mandatory for SMEs. SMEs, which derive $80 \%$ of their income from large companies, have to meet the technological requirements of large companies and want to get a share of the global e-commerce market. Therefore, they have to adapt to technological developments and bear the costs of digitalisation. (David-Lamie, Barkley \& Markley, 2008)

- Reaching Wide Audiences: Thanks to digitalisation, businesses can reach large audiences around the world by getting rid of limited geographical limitations. For example, large e-commerce platforms such as Amazon have achieved great success by providing access to millions of customers.
- Use of Customer Data: Digitalisation makes it possible to use customer data more effectively. For example, Netflix offers personalised content recommendations by analysing users' viewing habits, which increases customer satisfaction.
- Operational Efficiency: Digitalisation offers the opportunity to automate business processes and increase efficiency. For example, an automation system can optimise many processes, from taking orders to inventory management.
- Fast Response: Digitalisation enables businesses to respond quickly to customer demands. For example, during the pandemic, many restaurants and grocery stores were able to stay in business by offering online ordering and delivery services.
- Marketing and Advertising Effectiveness: Digitalisation offers the opportunity to create targeted digital advertising campaigns and track results. For example, Facebook and Google advertising platforms provide advertisers with the ability to run highly targeted advertising campaigns. (David-Lamie, Barkley \& Markley, 2008)


## Case Study Analysis

Amazon is an important example of the success of digitalisation in the field of e-commerce. Amazon started as an online bookseller from the late 1990s and has made the best use of digitalisation over time. (Dopinger Blog, 2023)

Here are some key success factors:

- Wide Product Range: Although Amazon was initially limited to books only, over time it has expanded its customer base by offering a wide range of products including electronics, clothing, home appliances and more.
- Personalised Recommendations: Amazon uses advanced data analytics to track customer behaviour and provide personalised product recommendations based on this information.
- Fast Delivery: Amazon Prime membership increases customer satisfaction by offering fast delivery options such as same-day or one-day delivery.
- Data Security and Privacy: Amazon attaches great importance to the security and privacy of customer data, which increases customer trust.
This example shows how important digitalisation is for success in e-commerce. Amazon has become a leading e-commerce platform worldwide by effectively using digital technologies and customer data.


## Digitalisation in SMEs in Türkiye

KOSGEB is one of the leading institutions contributing to the digitalisation and e-transformation process of SMEs in Türkiye.

According to Law No. 3624 of 12.04.1990 on the Establishment of the Administration for the Development and Support of Small and Medium Enterprises, the most important task of the organisation is. (Official Journal, 1990)

Increase the share and efficiency of small and medium enterprises in meeting the economic and social needs of the country, increase their competitiveness and level, achieve industrial integration in line with economic development.

Details on growing technology investment are mentioned as one of the tasks of the organisation so that SMEs can reach the level of modern and up-to-date business management and increase their productivity.

In line with its founding objectives and in line with global technological advancements, KOSGEB has proposed a number of support programmes for SME growth. These support programmes also help SMEs to become more digital.

Some SMEs have entered the digitalisation process, especially by supporting software and hardware solutions that manage production processes started in the 2000s. (Official Journal, 1990)

The largest and most widespread digitalisation step in Türkiye, which also involved SMEs, started with mandatory e-invoicing.

Today, digitalisation is high on the agenda for many industries. One of the key organisations guiding the digital transformation of SMEs in this process is KOSGEB. To ensure that SMEs in Türkiye are competitive in this market and to hasten their adaption to Türkiye's digitalisation process, KOSGEB has undertaken a number of support projects and programs.

KOBİGEL's Programme to Support Small Business Development: One of KOSGEB's most well-known support initiatives, KOBGEL, aims to help SMEs that are domestic technology developers and can make a difference in the digitalisation process. Calls for project ideas are made specifically for SMEs engaged in the manufacturing industry sector within the framework of this program. These calls encourage SMEs to quicken the process of their digital transformation so they can compete more successfully on a global scale. (KOSGEB, 2023)

Digitalisation Supports in Manufacturing Industry: KOSGEB provides financial support to digitalising SMEs with "Digitalisation in Manufacturing Industry" themed supports. These supports are provided to facilitate the digital transformation processes of SMEs, strengthen their technological infrastructure and ensure a rapid adaptation to the digitalisation process. (KOSGEB, 2021)

In conclusion, KOSGEB's contributions to the digitalisation process enable SMEs in Türkiye to become more active and competitive in digital transformation. With the use of these resources, SMEs are expected to improve their technological foundation, quickly adopt the digitalization process, and perform better on a worldwide scale.

## Electronic Invoice \& E-Ledger

The digitalisation process has led to significant changes in the field of accounting and finance, as in many areas of the business world. Electronic invoice (e-invoice) and electronic ledger (e-ledger) applications are the most prominent examples of these changes. Especially for SMEs, the advantages, conveniences and difficulties brought by these applications are very important.

Advantages and Conveniences:

- Cost Saving: The use of e-invoice and e-ledger eliminates the costs associated with traditional methods such as paper, printing, shipping and archiving.
- Speed and Accessibility: The processes of creating, sending and storing invoices and ledgers electronically are accelerated. In addition, it offers access at any time and place.
- Order and Organisation: E-invoice and e-ledger ensure that accounting records are kept in a regular and organised manner.
- Environmental Sensitivity: Reduced use of paper contributes to environmental sustainability.
- Security: Data stored in electronic media is more secure than physical media. Also, the risk of data loss is reduced. (Turkcell e-Şirket, 2023)
- The Difficulties:
- Technological Infrastructure: SMEs need to have the necessary technological infrastructure in order to use e-invoice and e-ledger applications. This may be costly for some SMEs.
- Training and Adaptation: Trainings may be needed for staff to adapt to these new systems. This process may be time consuming and costly in the beginning.
- Technological Problems: Technical problems that may be experienced in electronic systems may cause disruptions in business processes. (Tektüfekçi, 2018)

In conclusion, although e-invoice and e-ledger software provide SMEs wvith several benefits and conveniences, some challenges may arise during the switch to these systems. The advantages of these applications, though, will ultimately outweigh the challenges. In order to stay up with the digital transformation process and to be in a strong position in the global competitiveness, SMEs must adapt to such applications.

## Electronic Invoice

Electronic invoices are invoices provided to customers without printed papers by issuing the traditional invoice issued on printed papers in an electronic environment with growing technology.

In Türkiye, the Tax Administration is responsible for monitoring the transition to an electronic invoicing system. The General Communiqué on Tax Procedure Law No. 397, published on 5 March 2010, marked the beginning of the transition to electronic invoicing. The Tax Administration supervises all operations related to electronic invoices, and this electronic invoice system has the same characteristics and legal requirements as a paper invoice. The "Special Integrator" system was
introduced and integrated into the electronic invoicing system to expand and improve it. (Official Journal, 2010)

The term "electronic invoice" refers to the electronic version of an invoice issued in the format and procedure adopted by the Revenue Authority (RA) and meeting the same legal requirements as a printed invoice. (Official Journal, 2010)

Taxpayers registered in the e-invoice application are obliged to send and receive e-invoices for goods purchased and services rendered as of 1.9.2013. (Official Journal, 2012)

Since 2015, hundreds of businesses have been able to switch to the e-invoicing system thanks to this legal requirement.

According to the Tax Administration website, there are 1060465 taxpayers with electronic invoices in Türkiye (as of 23 September 2023). More than $50 \%$ of companies in our country, where 1060465 taxpayers are registered, have started digitalisation due to the legal regulations. (Gelir İdaresi Başkanlığ1, 2023)

The e-invoice that emerged with this digitalisation is 2023shown below with an image taken from Solon Software. (Figure 4)


Figure 4: e-invoice example (Solon Software,2023)

## E-Ledger

The use of e-dispatches has increased the digitalisation of processes in SMEs from 1 July 2020, thanks to the amendments to the General Communiqué on the Tax Procedure Law No. 509, published in the Official Gazette on 19 October 2019 under number 30923. (Official Journal, 2019)

The e-ledger, which has emerged with increasing digitalisation thanks to the amendments made in the General Communiqué on Tax Procedure Law, is exemplified with a visual from Solon Software. (Figure 5)


Figure 5: e-ledger example (Solon Software,2023)

## Order Management

According to the Turkish Language Institution, "to order" (noun) is "to request, send, bring, order something". (Türk Dil Kurumu Sözlükleri, 2022)

Today, the increasing competitive conditions and the rapid growth of consumption have led to customer demands, diversity and multiplication of sales
and distribution channels. In particular, the increase in e-commerce-based sales demands in parallel with technological developments has made effective order management essential for business.

For this reason, many companies have been forced to make organisational changes. One of the most important of these changes is order management.

Order management is a chain that extends from the receipt of enquiries or orders to delivery and collection.

This process essentially consists of,

- pricing the order
- record keeping
- inventory control
- stock reservation
- determining production and purchasing requirements
- delivery processes
- the recording steps.

The Order Management System is a tool that manages the process between the customer's order and the delivery of the product. While each step in this process is recorded, it ensures that stakeholders who play a role in the process are informed and kept up to date, and that information is shared.

Management systems must be carried out in accordance with certain quality standards. In this ISO 9001 Quality Management System Standard, which has been accepted worldwide, is used.ISO 9001 is a standard set by the international standards organisation ISO for a business-enhancing quality management system that is preferred worldwide. (Ortadoğu Bilgi Yönetim Merkezi, 2023)

A quality management system is a collection of deliberate actions based on knowledge of customer satisfaction. To meet both consumer satisfaction and sectoral requirements of organisations, it is a quality management standard.

## Use of Order Management in the Digital Environment

The modern idea of "Industry 4.0 " has increased the technical spending of large companies in SMEs and at the same time accelerated the digitalisation of SMEs, which are the largest suppliers of large companies. (Ege, 2014)

Many small SMEs in Türkiye have started to use software integrated with hardware.

Basically, the aim of Industry 4.0 is to integrate information technologies into industry. The first main component is the new generation of software and
hardware, i.e., hardware that is different from the current classical hardware in terms of cost, small footprint, low energy consumption, low heat generation and high reliability. The operating system and software systems that run this hardware should also be resource and memory efficient. (Ege, 2014)

Digitalisation is essential due to intensifying competition in the global market, government-imposed legal obligations and accelerating technological progress. These advances have also been favored by relatively low costs for technical investments.

Even in small SMEs in Türkiye, a culture of software use has developed. In small and medium-sized SMEs, the use of hardware and machine-integrated software has increased significantly. Examples include CNC equipment, and the use of robots is becoming more widespread in several industries.

SMEs that are heavily involved in e-commerce tend to use more technology and electronic transformation goods.

As a result, SMEs that create e-commerce applications are registering more people every day. For example, they have to provide hundreds of invoices, delivery notes and even orders on the same day. It has also become essential to provide stock and technical information about products on their own portals or on the e-commerce platform they use.

Systems that can communicate with each other have proven to be the solution for achieving system sustainability on a scale that cannot be achieved by increasing staff. Various integration techniques can be used to connect ERP systems and e-commerce websites.

Companies can benefit from API services offered by e-commerce websites such as Trendyol, Hepsiburada and Morhipo, which are among the dominant participants in the e-commerce sector in our country.

The Trendyol Marketplace API integration enables companies participating in the Trendyol Partner Programme to connect Trendyol shops to their e-commerce systems via Trendyol API services and perform many operations such as product transfer, inventory and price update, order transactions, invoice dispatch and customer enquiries. (Trendyol, 2023)

Famous e-commerce platforms such as JD.com, Amazon and Alibaba offer convenience to their suppliers through strong and simple integrations. (Graphic 10) (SAP Community, 2017)


Graphic 10: E-commerce integration diagram (SAP Community, 2017)

As mentioned earlier, web service integrations are the most commonly used methods today, but in the past companies also had digital order management solutions. The most commonly used are EDIs. (EDIbasics, 2023)

Electronic Data Interchange (EDI) is the exchange of business documents between business partners in a standardised electronic format from computer to computer. (EDIbasics, 2023)

SMEs in Türkiye and elsewhere have not yet made much use of EDI-driven systems. The lack of a flexible framework and the high cost of integration software are the reasons for this.

## CHALLENGES IN ORDER MANAGEMENT FOR SMES AND POTENTIAL SOLUTIONS

Small and Medium-sized Enterprises (SMEs) play a pivotal role in both the Turkish economy and the global market. However, these enterprises often grapple with challenges related to order management and production. (Ayyagari, DemirgüçKunt \& Maksimovic, 2011)

Some of the primary challenges include:

1. Technology Deficiency: In today's digital age, the ability to access and utilize information effectively is intrinsically linked to a robust technological infrastructure. Many SMEs, due to limited resources or lack of awareness, might not have the requisite technology infrastructure, leading to inefficiencies in order management. (Porter \& Heppelmann, 2014)
2. Purchasing Limitations: SMEs, given their size and scale, often operate on a flexible, order-based production model. This can hinder their ability to leverage bulk purchasing discounts on raw materials. Their smaller order quantities compared to larger enterprises might also result in quantity restrictions imposed by suppliers. (Nooteboom, 1994)
3. Financial Constraints: Capital is a significant concern for SMEs. Limited financial resources can impede their ability to invest in advanced technologies that could streamline their operations. (Beck, Demirgüç-Kunt \& Maksimovic, 2005)
4. Talent Acquisition: SMEs might find it challenging to attract and retain skilled workers, especially for technical roles or specialized positions, due to competition with larger firms offering better compensation and benefits. (Cardon \& Stevens, 2004)

To navigate these challenges, several solutions can be considered:

1. Technological Investments: By bolstering their technological infrastructure, SMEs can enhance their order management processes, leading to better efficiency and customer satisfaction. (Karadeniz, 2008)
2. Financial Support Mechanisms: The establishment of more financial leasing entities can provide SMEs with the necessary capital to finance their technological and operational acquisitions. (Öztürk \& Karabulut, 2015)
3. Training and Consultation: SMEs can benefit immensely from training programs and consultancy services tailored to their needs. By enhancing their knowledge of production and order management, they can optimize their operations and remain competitive. (Kozak, 2002)

## SOLON TRADE ORDER MODULE

Today, with the rapid advancement of technology, businesses are turning to various software and modules to make their operational processes more efficient and automated. In this context, Solon Trade Order Module (STOM) is an innovative tool that helps SMEs to digitalise their order management processes.

STOM is a software module that enables businesses to manage their order processes through a centralised platform. This module saves time and cost for businesses by automating all processes from order intake to delivery.

STOM has a user-friendly interface and can be easily integrated with the existing systems of businesses. When an order is received, this module automatically checks inventory, automatically sends orders to suppliers when necessary and informs the customer about the delivery process.

In an interview with the COO of Solon Software on 03.04.2023, she listed the advantages of STOM for SMEs as follows:

- Time Saving: Time spent on manual operations is reduced due to automated processes.
- Cost Savings: Unnecessary inventory costs and emergency supply costs are avoided through automated inventory control and supplier management.
- Error Minimisation: Minimises errors in order processes by eliminating manual entry errors.
- Customer Satisfaction: Increases customer satisfaction by automatically informing customers about the order process.
As a result, Solon Trade Order Module helps SMEs modernise their order management processes and take an important step in digital transformation. This module enables businesses to stay competitive and meet customer expectations.

Solon Trade is an ERP system produced for SMEs. Enterprise Resource Planning (ERP) is the integrated management of key business processes, often in real time and mediated by software and technology. ERP is often referred to as a category of enterprise management software (usually a set of integrated applications) that a company can use to collect, store, manage and analyse data from numerous business activities. ERP systems can be operated locally or in the cloud.

## SOLON TRADE SME SET: AN OVERVIEW

The Solon Trade SME SET is a comprehensive software suite designed to cater to the diverse needs of small and medium-sized enterprises. It offers a holistic approach to business management, ensuring that all aspects of an enterprise's operations are seamlessly integrated and efficiently managed.

Core Features of the Main Module (Laudon \& Laudon, 2016):

- Inventory Tracking: This feature ensures that businesses have real-time data on their stock levels, helping in efficient inventory management and reducing wastage.
- Invoice-Waybill Management: Streamlines the process of generating and managing invoices and waybills, ensuring timely billing and revenue collection.
- Digital Transaction Documents: The suite offers functionalities like E-invoice, E-Archive Invoice, and e-shipping note, making the transition to a paperless environment smoother and ensuring compliance with digital transaction regulations.
- Current Account Management: Helps businesses keep track of their financial transactions, ensuring transparency and accuracy in financial reporting.
- Collection and Transfer Vouchers: Facilitates the management of incoming and outgoing funds, ensuring timely collections and payments.
- Cheque Notes Tracking: Provides businesses with tools to manage and track cheque transactions, reducing the risk of fraud.
- Expenditure and Income Accounts: Offers detailed insights into a company's expenses and revenues, aiding in better financial planning.
- VAT Reports: Automates the process of generating VAT reports, ensuring compliance with tax regulations.
- Graphics: Visual representation of data for better understanding and decisionmaking.
- Integration: Ensures seamless integration with other modules and external systems for holistic business management.

Specialized Modules (Turban \& et.al., 2018):

- Sales and Marketing Module: Streamlines sales processes and helps in devising effective marketing strategies.
- Ordering Module: Facilitates efficient order management, ensuring timely deliveries and customer satisfaction.
- Purchasing Module: Helps businesses manage their procurement processes, ensuring cost-effective purchasing.
- Manufacturing and Cost Module: Provides tools for efficient production management and cost analysis.
- Quality Control Module: Ensures that products meet the set quality standards.
- Technical Service and Maintenance Module: Facilitates the management of after-sales services and routine maintenance tasks.
- Transport-Warehouse Automation: Streamlines logistics and warehouse management processes.
- Integration Modules (O’Brien \& Marakas, 2011):
- Solon General Accounting: Ensures that all financial transactions are accurately recorded and reported.
- E-Book Applications: Facilitates the management of digital publications and resources.
- Solon Personnel Payroll: Streamlines payroll processes, ensuring timely and accurate compensation to employees.
- Declaration: Helps businesses in generating and managing various declarations for compliance purposes.


## SOLON TRADE SME SET WORKFLOW

Solon Trade SME SET is a comprehensive workflow system introduced by Solon Software in 2023. This system is designed to help small and medium-sized enterprises (SMEs) perform their operational tasks more efficiently. Graphic 11 below shows in detail how Solon Trade SME Set users will perform their operations using which modules and functionalities. These modules cover a range of functions from sales and marketing activities to financial record keeping.


Graphic 11: Solon Trade SME SET Workflow Diagram (Solon Software, 2023)

- Offer \& Sales: Sales \& marketing department users create their sales meetings, notes, offers (with statuses such as draft, approved, approved, in progress),
contracts by using this module. Since the history of the offers, contracts and all interview notes are recorded in the system, the corporate memory is also provided for the relevant department.
- Sales \& Purchasing: For the offers approved by the sales and marketing department, the purchasing or ordering applications fall into the workflows of the users. By operating the approval hierarchy, the received order or given order forms are created by taking into account the ISO forms, if any.

After completing the purchasing forms and approval procedures, users with the Purchasing role complete the bid comparison and evaluation processes from the purchasing processes.

A received order is included in the workflow for the start of the production planning process on the Manufacturing \& Cost module through the production module, if there are production processes in the relevant company.

- Manufacturing \& Cost: Users of this department have the functions of production planning, material requirement determination, costing, quality control forms.
- Delivery/ e-delivery note: Order module users have the role of creating the forms of the products to be received and delivered with their quantities.
- Invoice/ e-invoice: Forms created with the order module are priced by falling into the invoice module workflow.
- Current Account: Current accounts whose invoice processes are completed or formed by different current transactions are followed by the finance department. It is integrated with the official accounting modules of Solon KOBİ Set.
- Employee Payroll Module: According to legal regulations, it organises personnel payrolls.
- Ledger/e-ledger Module: Creates all financial records of the company as official ledgers according to legal regulations.
- Declaration Forms Module: It prepares the declarations that companies are legally obliged to prepare.


## SOLON TRADE ORDER MODULE MANDATORY FIELDS

In a competitive market where it is critical for small and medium-sized enterprises (SMEs) to effectively manage their business processes in order to survive, Solon Trade SME SET is a software solution designed specifically for this need. As shown in Figure 6, this software covers four main scopes from inventory management to
personnel management, focusing on the core needs of businesses. In this article, we will examine in detail why the mandatory areas of the Solon Trade Order Module are so important for businesses.


Figure 6: Solon Trade Order Module Diagram with mandatory fields (Solon Software, 2023)

Inventory management enables businesses to meticulously monitor and control their inventories. In this way, it is possible to efficiently manage products, materials and stocks and make the best use of resources. In addition, Solon Trade KOBİ SET enables standardised selling prices to be set, customer and supplier stock records to be kept and delivery dates to be easily tracked.

Services management helps businesses to effectively plan and monitor services, services or projects offered. This module ensures that services are delivered on time, optimises processes and increases customer satisfaction.

Accounting management plays a critical role in recording financial transactions, generating reports and monitoring financial health. Solon Trade SME SET helps businesses maintain income and expenditure balance and ensure tax compliance.

Finally, personnel management includes keeping employee data up-to-date, salary calculations, recruitment processes and training. This module streamlines human resources processes and allows businesses to focus on their employees.

Solon Trade SME SET helps SMEs manage their operations more efficiently and effectively, while at the same time allowing them to strengthen customer and supplier relationships. In this way, businesses gain a competitive advantage and maximize their growth potential.

## ESSENTIAL COMPONENTS OF THE SOLON TRADE ORDER MODULE

In the Solon Trade Order Module, there are specific fields that are deemed essential for the smooth processing of orders. These fields are integral to the order acceptance and placement interface, ensuring that all necessary details are captured for efficient order management.

## Mandatory Fields:

- History: This field captures the chronological record of the order, detailing when it was placed and any subsequent modifications or updates.
- Current Card (Supplier/Customer): This is a crucial identifier, specifying whether the order pertains to a supplier or a customer.
- Stock/Service Cards: These cards need to be defined to provide clarity on the specific stock item or service being ordered.
- Quantity: It is imperative to specify the amount of the stock or service required to ensure accurate order fulfillment.
- Date of Delivery: This field indicates the expected or agreed-upon delivery date, ensuring both parties are aligned on timelines.


## Optional Fields:

While the following fields are not mandatory, they offer additional clarity and detail to the order:

- Serial/Sequence Number: A unique identifier for the order, aiding in tracking and management.
- Form Description Field: Provides a brief overview or description of the order, offering context to those processing it.
- Company Personnel: This field can be used to specify the individual within the company responsible for the order, ensuring accountability.
- Ordering Staff: Specifies the staff member who initiated or placed the order, providing a point of contact for any queries.
- Price (TRL): The cost of the order in Turkish Lira.
- Price in Foreign Currency: If dealing with international transactions, this field captures the order's cost in the relevant foreign currency.
- Customer Stock Code: A unique code that identifies the specific stock item from the customer's perspective.
- Product and Service Description: A detailed description of the product or service being ordered, ensuring clarity on specifications or requirements.
- Secondary Delivery Date: An alternative date for delivery, providing flexibility in order fulfillment.
By ensuring that these fields are accurately filled out, businesses can streamline their order management processes, reduce errors, and enhance customer satisfaction.


## THE IMPACT OF DIGITALISATION AND IMPROVEMENTS IN ORDER MANAGEMENT ON SMES

Digitalisation has revolutionized the way SMEs operate, offering them tools and solutions to enhance their efficiency and competitiveness in the market. With the advent of advanced software solutions, SMEs have been able to streamline their order management processes, leading to improved operational efficiency, reduced errors, and enhanced customer satisfaction. This transition to digital processes has not only optimized day-to-day operations but also paved the way for SMEs to tap into new markets and opportunities. This section delves into the profound impact of digitalisation on SMEs, highlighting the challenges, benefits, and the transformative role of modern order management systems.

Based on interviews conducted with Solon Software and a comprehensive analysis of demographic data, the findings reveal valuable insights into the performance and impact of Solon Software solutions on businesses. The participating firms, referred to as $A, B$, and $C$, provided data spanning from the inception of their collaboration with Solon Software up until the year 2020. These insights offer a nuanced understanding of how Solon Software has influenced and supported these companies over time, shedding light on the evolution and effectiveness of their software solutions in a real-world context.

- Company A is a medium-sized enterprise. Founded in 1994, the company is one of the main suppliers of white goods manufacturers and other companies in the sector that need plastic parts such as the automotive industry, especially in the field of plastic mould production and plastic injection production.

The company operates in the B2B model and applies business processes in accordance with ISO standards. The company, which has import-export, production, order quality control, finance and accounting departments, has been managing its processes with Solon Trade SME and Solon Official Accounting ERP applications since 2015.

The company, which creates a significant number of employments with 200 employees in the production department and 45 employees in other departments,
is one of the important values of our country with its quality product production and important activities for export.

- Company B is a medium-sized enterprise. Founded in 1986, the company manufactures parcels, boxes and similar containers, mainly made of paper or cardboard. It is located in the printed packaging paper and cut paper sector.

The company operates in the B2B model and applies business processes in accordance with ISO standards. The company, which has export, production, order quality control, finance and accounting departments, has been managing its processes with Solon Trade SME and Solon Official Accounting ERP applications since 2010.

The total number of personnel of the company is 175 , the company, which creates a significant number of employment, is one of the important values of our country with its quality product production and important activities for export.

- C is a medium-sized enterprise. This company is located in the machinery spare parts manufacturing sector. Founded in 1986, the company is engaged in machinery processing of metals (turning operations, metal parts drilling, lathering, milling, grinding, polishing, grooving, polishing, joining, welding, etc. activities) (except laser cutting of metals).
The company operates in the B2B model and applies business processes in accordance with ISO standards. The company, which has export, production, order quality control, finance and accounting departments, has been managing its processes with Solon Trade SME and Solon Official Accounting ERP applications since 2015.

The total number of personnel of the company is 149 , the company, which creates a significant number of jobs, is one of the important values of our country with its quality product production and important export-oriented activities.


Graphic 12: ABC Companies Sales Chart (201-2020) (Solon Software, 2023)

Growth is observed in SMEs A, B and C between 2010-2020. Digitalisation and technology use had a positive impact on all 3 firms. (Graphic 12)

The e-invoice liability, which started on 5 March 2010 with the General Communiqué on Tax Procedure Law No. 397, became compulsory for companies that meet the criteria in 2015.
$\mathrm{A}, \mathrm{B}$ and C companies are the companies that were included in this application in 2015. During these periods covering the management of e-invoices, companies have made arrangements in each unit and made the operations of all departments traceable on software.

This compulsory transition and the new digital recording system, in which all departments are integrated, have enabled all departments of the company to work with more accurate data. As can be seen in the graph, this new positive arrangement has positively affected the growth and profitability rates of the company by causing an increase in the sales figures of the company. Company A increased $34 \%$ in 2017, Company B $81 \%$ in 2018 and Company C achieved $41 \%$ sales growth in 2018.


Graphic 13: ABC Companies Ratio of Return to Turnover (201-2020) (Solon Software, 2023)

One of the most important problems of SMEs in the past and today is inventory management delivery and production, which is one of the most important points of this process. The common point of these problems is based on order management.

Unrecorded or incompletely recorded orders can cause companies to stop production, loss of customers, loss of time and serious financial losses.

The problem experienced by Company A in the early 2000s, which started with the export products being sent to a different country, was an important operational and financial loss experienced by the company in those years. (Graphic 13)

As can be seen in the graphs, the correct planning of order management after the 2015s, when digitalisation started, has positively affected the sales and profitability rates of the companies.


Graphic 14: ABC Companies Profitability by Year (201-2020) (Solon Software, 2023)

In the graph, it can be observed that the profitability of firms $\mathrm{A}, \mathrm{B}$ and C has progressed positively.

From 2015 to the present day, the applications of e-transformation processes in commercial life, the increase in the use of technology by companies, and the tendency of companies to digitalise as all units have also increased the profitability of companies. (Graphic 14)

Since the monitoring of all operations within digital systems prevents possible errors, it leads to a decrease in the costs of companies and an increase in their profitability. Digitalisation is also an important factor to increase customer potential, as companies prefer to work with companies with which they can exchange data and have standards in purchasing processes.

The transformative power of digitalisation on Small and Medium-sized Enterprises (SMEs) is undeniable. As evidenced by the experiences of Companies $\mathrm{A}, \mathrm{B}$, and C , the integration of advanced software solutions, particularly those offered by Solon Software, has significantly enhanced operational efficiency, reduced potential errors, and bolstered customer satisfaction. The mandatory transition to e-invoicing and the subsequent digital recording systems have further streamlined operations, ensuring that departments work with precise data. This digital shift has not only optimized daily operations but has also been instrumental in driving growth, as reflected in the sales and profitability figures from 2010 to 2020. Moreover, the challenges faced by SMEs, such as inventory and order management, have been substantially mitigated with the onset of digitalisation.

The upward trajectory in profitability across the three companies underscores the pivotal role of digital transformation in today's business landscape. As the world continues to embrace technology, it is imperative for SMEs to harness the potential of digital tools and solutions to remain competitive, reduce costs, and maximize profitability.

## CONCLUSION

The transformative power of digitalisation on Small and Medium-sized Enterprises (SMEs) is undeniable. As the global business landscape evolves, the integration of digital tools and processes has become imperative for SMEs to remain competitive and efficient. This research has delved deep into the multifaceted impact of digitalisation, particularly focusing on the role of advanced software solutions in streamlining order management processes.

From the data gathered through interviews with Solon Software and the indepth analysis of demographic data, it's evident that software solutions like those offered by Solon Software have played a pivotal role in enhancing the operational efficiency of businesses. The case studies of Companies A, B, and C offer a realworld testament to this claim. These companies, with their varied backgrounds and industries, have all reaped the benefits of integrating Solon Software solutions into their operations. The data spanning a decade, from the inception of their collaboration with Solon Software up to 2020, paints a picture of growth, efficiency, and enhanced customer satisfaction.

Several challenges faced by SMEs were highlighted, including the constraints imposed by suppliers, financial limitations, and the challenges of talent acquisition. However, the solutions to navigate these challenges, such as technological investments and financial support mechanisms, underscore the importance of embracing digitalisation. The mandatory transition to e-invoicing, as illustrated by the experiences of Companies $\mathrm{A}, \mathrm{B}$, and C , further emphasizes the need for SMEs to adapt to digital changes. The positive correlation between digitalisation and growth in sales figures for these companies is a testament to the tangible benefits of this transition.

Furthermore, the issues of inventory management, delivery, and production, which have historically plagued SMEs, have seen significant improvements with the correct planning of order management in the digital era. The graphs provided in the research further corroborate the positive impact of digitalisation on the sales and profitability rates of SMEs.

In conclusion, the digital revolution offers a plethora of opportunities for SMEs. By embracing advanced software solutions and digital processes, SMEs can not only optimize their operations but also position themselves for sustained growth and success in an increasingly digital world. The experiences of the companies highlighted in this research serve as a beacon for other SMEs, emphasizing the importance of adaptability, continuous learning, and leveraging technology for business success.

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