

COMARCH



IT'S STILL E-INVOICING, ONLY BETTER

Exploring the New Document Exchange Techniques

A Two-Part e-Book Series

Book One: Using AI to Improve e-Invoicing

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About the Series

Some companies, especially those that have yet to embark on their e-invoicing journey, think of this modern software as a paradigm shift. In a way, they are right – they are venturing into unfamiliar territory. **Looking for ways to optimize their processes and drive business performance, they are choosing to give up old habits of handling documents manually and start using software-defined products instead.** It is no easy decision to make, but the results are worth it.

Moving away from paper-based document exchange and going digital, however, is just the beginning. What it means is that, **just like any other software, e-invoicing solutions can be further improved**, whether through the use of AI/ML-driven

data processing and analytics or the introduction of features designed to help facilitate the onboarding process. The benefits speak for themselves: **higher quality of data, more advanced information security, fast configuration, improved cash flow** – the list goes on and on.

Besides, if you are already on the way, why stop now?

This is, above all, why we made enhancements such as AI and easy onboarding central themes of our new e-book series. Both part one and part two were created to **showcase Comarch's latest technological achievements in e-invoicing and explain how and why they make all the difference.** Are you ready?





Chapter One

Why use AI/ML in e-Invoicing in the first place?

1.1. WHY ARE BUSINESSES SO INTERESTED IN AI/ML?

Whenever the topic of artificial intelligence is brought up, it is not unusual for some people to visualize a group of mean-spirited supercomputers that operate on a similar level to how the human mind works. Considering that entrepreneurs like Elon Musk often raised their concerns about the possible negative effects of creating simulations of intelligent behavior, such reaction should come as no surprise. Still, the kind of AI these entrepreneurs are talking about has nothing to do with **today's AI/ML-driven technologies used for business applications - the ones that do not cause any disturbance, but on the contrary, bring additional value.**

For starters, **AI/ML-based business technologies have been around for quite some time now**, helping companies such as Amazon, Google, and

Walmart personalize their product offers, automate supply chains, as well as identify anomalies in their clients' behavior to prevent fraud. This also explains why so many business magazines, including [Forbes](#), expect **the global machine learning market to grow at a CAGR of 43% from 2020 to 2024**, but that is not the only reason.

This brings us to the second point: AI/ML solutions have turned out to be so good at performing the above-named operations that some technology providers, such as Comarch, are now **redesigning their systems and services used for other business applications**, for instance, document management and data exchange, **incorporating the latest AI/ML algorithms to improve their efficiency**. But how, exactly? Well, let's take e-invoicing as an example.

1.2. HOW DOES A TRADITIONAL E-INVOICING SYSTEM WORK?

The sole purpose of a traditional e-invoicing solution is to **allow any given company to automate the handling of electronic and paper documents**. This is achieved mainly by using **data validation** and **data conversion**. In other words, the system is used to receive structured or unstructured documents from the sender, verify if the information they carry is correct based on the client's specifications (as well as the established business rules), and convert each file into a format required by the recipient.

Both reception and delivery of documents can be done via **various communication channels**: traditional mail, e-mail, web portal, web API, EDI. However, the process may also require the use of some additional services such as **scanning or indexing of unstructured documents**, as well as **parameterization and document approval** (to be performed before files are imported into the client's ERP system).

Why is it necessary to point all this out? **Because every move beyond this framework is considered a novelty** – definitely not a standard. And even though the use of AI/ML in the context of e-invoicing is not mandatory for it to work, when applied, it transforms a document exchange system into an entirely different animal, one that is much more agile and powerful.



1.3. IN WHAT WAY CAN AI IMPROVE E-INVOICING?

The general idea behind AI-driven business technologies is that we should be able to **provide computers with access to both structured and unstructured data and allow them to analyze it**. Why? So that they can identify recurring trends and patterns in those records and learn from them to establish new, more applicable business rules. Not only does such an approach enable business systems to **reach a higher level of intelligence, but it also helps greatly improve their performance**.

In the case of e-invoicing solutions, AI/ML technology can have a massive impact on their efficiency, providing enhancements to the existing features or delivering a brand-new range of functionalities such as **detecting anomalies** (significant for indicating possible vulnerabilities and preventing fraud) or **pairing invoice lines with their corresponding cost centers or ledger accounts**. The latter may not be considered a real novelty at first, but that depends on the context. We're talking about **situations that are much more complex than usual, for example, classifying partial or consolidated invoices**, when there are many invoices issued for one particular order or when multiple orders are assigned to a single invoice.

Plus, we are all well aware by now that **the exchange of electronic documents is quite a complicated process, partly because it involves using so many integrated elements** such as a customer's accounting system, often an AP/AR automation software, usually two dedicated data transmission channels - one connecting you to your e-invoicing technology provider and its proprietary modules, and the other connecting the provider with your partner - and, finally, your partner's ERP system. **Thus, we should expect AI/ML to be able to seamlessly facilitate that process**.

To be able to do that, however, **an e-invoicing system must be able to learn the patterns of how all of the operations that are part of the process should be performed**, so that in the event of any anomalies, it can solve the problem by itself or report on the probability of failure. And that's precisely what an AI-driven e-invoicing platform is designed to do.

Last but not least, **AI/ML technology can accelerate the adoption of the so-called touchless e-invoicing**. In other words, it can allow an even larger pool of documents to be exchanged without any human interaction. Considering that **paper document processing still drives the vast majority of business operations** (even though it means delayed payments, limited access to historical documents, as well as possibly experiencing security and health issues), using emerging technologies to eliminate paper-based operations **can have a positive effect both on the business and natural environment**.

Still not convinced? Okay, so let us put it this way. Picture this: **you suddenly have enough computing power to process hundreds of thousands of invoices effectively, organize massive stacks of data to your liking, and be able to identify and verify every transaction you ever made in a matter of seconds**. With such power, you can make the most of economies of scale, be in full control of the costs, and manage your supply chain much more efficiently. You'd probably agree that all of this sounds quite wonderful, to which we would say "it is achievable, but only with the use of AI/ML technology."

Of course, you can argue that what we just said is but a concept of how an AI-driven e-invoicing system is supposed to work, right? Which is why **it is time for us to leave theories behind and show you that Comarch is using AI to refine its document management systems and services for real**.



The Comarch approach

2.1. (MACHINE) LEARNING FROM EXPERIENCE

When it comes to AI-driven business technologies, as Comarch, we can say that we have already gained quite a lot of experience in this particular field. **Not only have we formed a special team whose primary goal is to explore the potential of AI and machine learning in business applications, but we've already used their findings and inventions to enhance our solutions.** For example, their innovations were used to refine our loyalty management system, enabling our clients to identify individual patterns in customers' behavior, thus allowing highly personalized product offers to be created. But before we delve into the specifics of the new AI/ML-based features we introduced to improve our document exchange systems, we need to say **a few words about our core e-invoicing solution** first.

The system we call [Comarch e-Invoicing](#) is a powerful, comprehensive product that **streamlines and automates one's AP/AR invoicing processes to enable efficient document exchange with all of their business partners and clients.** It is fully compliant with the latest legal regulations, and it can automatically verify and convert every invoice it sends or receives. The point we're making here is that **the system is capable of carrying out some of the most complex B2B and B2C operations without any enhancements whatsoever.** But just because something works doesn't mean it cannot be improved, right? Here's where AI and ML come into play.

"E-invoicing is one of the areas that are excellent for machine learning. First, we have enormous volumes of historical data that are stored and processed by e-invoicing platforms. Second, a lot of the processes involved are routines – very repetitive, and still being done manually.

This combination is exactly what AI/ML solutions need to thrive on. So, why not make AI do all of the routine tasks for us and focus on what we do best - problem-solving, creative thinking, experimentation, and so on?"

Maciej Tyczyński
Director of AI & Machine Learning at Comarch

2.2. PRESENTING A WIDE RANGE OF NEW FEATURES

As in the case of our other products and services, the AI/ML technology we developed helped us create **some new, unconventional, and groundbreaking document exchange features** that may as well be thought of as **steps towards e-Invoicing 2.0**. Here are a few of them.

2.2.1. ANOMALY DETECTION

Thanks to AI/ML, we are able to incorporate the anomaly detection functionality into our system. What this means is that **our solution can automatically identify possible deviations or errors in the invoice traffic**. Based on historical data and in-depth traffic analysis, we can use the system to easily **determine whether, for example, a given client should receive/send a particular set of documents or not**.

Plus, we can also use it **to detect other problems with the document exchange** caused, for instance, by a failure of the client's ERP system or unavailability of the communication channel. **In such a case, the system can inform our client that the infrastructure needs some repairs**. That in itself is a game-changer. But wait - there's more.



2.2.2. SMART BUSINESS RULES GENERATION

Next, there is smart business rules validation, that is **using AI/ML technology to process and analyze information collected from the client's internal systems** (i.e., ERP) such as PO data – as well as the data extracted from their historical records.

With this approach, we can generate new business rules to **check for duplicates, match invoices to their corresponding purchase orders (PO), and assign invoice lines to the right Cost Center or GL Account** (most effective in the case of non-PO invoices that usually need to be processed manually, as well as PO invoices whose data does not match the order; those that may include information about, for example, additional costs of transportation).

As you can imagine, this helps **significantly reduce human errors in document processing**, which results in not only **lower operational costs** but also a **lower risk of being non-compliant with the legal requirements**.

2.2.3. AUTOMATIC DATA VALIDATION AND COMPLETION

Then, we have automatic validation and completion of data, which basically means that the system **can verify data presented in a given invoice and classify that invoice with information such as GL, CC, and tax codes automatically.**

The work of AI/ML algorithms does not end here, however. **In the event of detecting any deviations** from the previously generated business rules, **the system can update the model with the information provided in new documents**, adjusting the existing document processing methods on the spot.

Now, that's not to say that the technology can do as it sees fit. **If the system is not entirely sure** about making some particular modifications, **it can ask the system operator to authorize those changes.**

The overall result? Reduced workload, higher quality of financial data, as well as a lower chance of having to deal with human errors.



2.2.4. SELF-LEARNING IMAGE CONVERSION

Last but not least, we have **have image conversion software** that can turn unstructured content into machine-encoded, editable documents. Thanks to our AI-based software, **invoice data can finally be extracted without the creation of templates.** What it means is that in the area of indexing unstructured documents, **the system can teach itself indexing rules based on the operator's decisions.**

Also, this feature makes it possible to **put your historical invoice data into the system right at the beginning of a new e-invoicing project.** That way, the system can read it, learn from it, and come up with some legitimate business rules on the spot, which can make your work a lot easier from the get-go.





Summary

It cannot be denied that **Artificial Intelligence and Machine Learning technologies have already become an integral part of today's business environment**, and they continue to make an impact. From our perspective, knowing what they brought to document exchange, loyalty management, we fully expect them to be used by us - and other vendors - for many different business applications in the future.

However, using AI and ML is **NOT the only way to improve e-invoicing**, or document exchange in general. Stay tuned for the second part of our series, where we will explore **the latest advancements in partner onboarding, invoice creation, data-driven business communication**, and more.

If you want to know more about Comarch e-Invoicing, please visit our [official website](#) or contact us at info@comarch.com.

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ABOUT COMARCH

For the past 25 years, Comarch has been a global provider of advanced, software-defined technologies that help companies from all industries optimize their key business processes. The company's vast portfolio includes e-Invoicing platform as well as systems and services for efficient data and document exchange such as Master Data Management, Electronic Data Interchange, Online Distribution. Each of the products is fully compliant with the latest local regulations and allows enterprises to improve their business performance, gain a competitive advantage, and reduce operational costs. Comarch's clients include top professionals from various sectors: retail (e.g., METRO-NOM, Tesco, Carrefour) FMCG (e.g., BIC, Johnson & Johnson, L'Oréal, Unilever), pharma (e.g., GlaxoSmithKline, Sanofi) and many more.

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