» Guide

Google Cloud Partner

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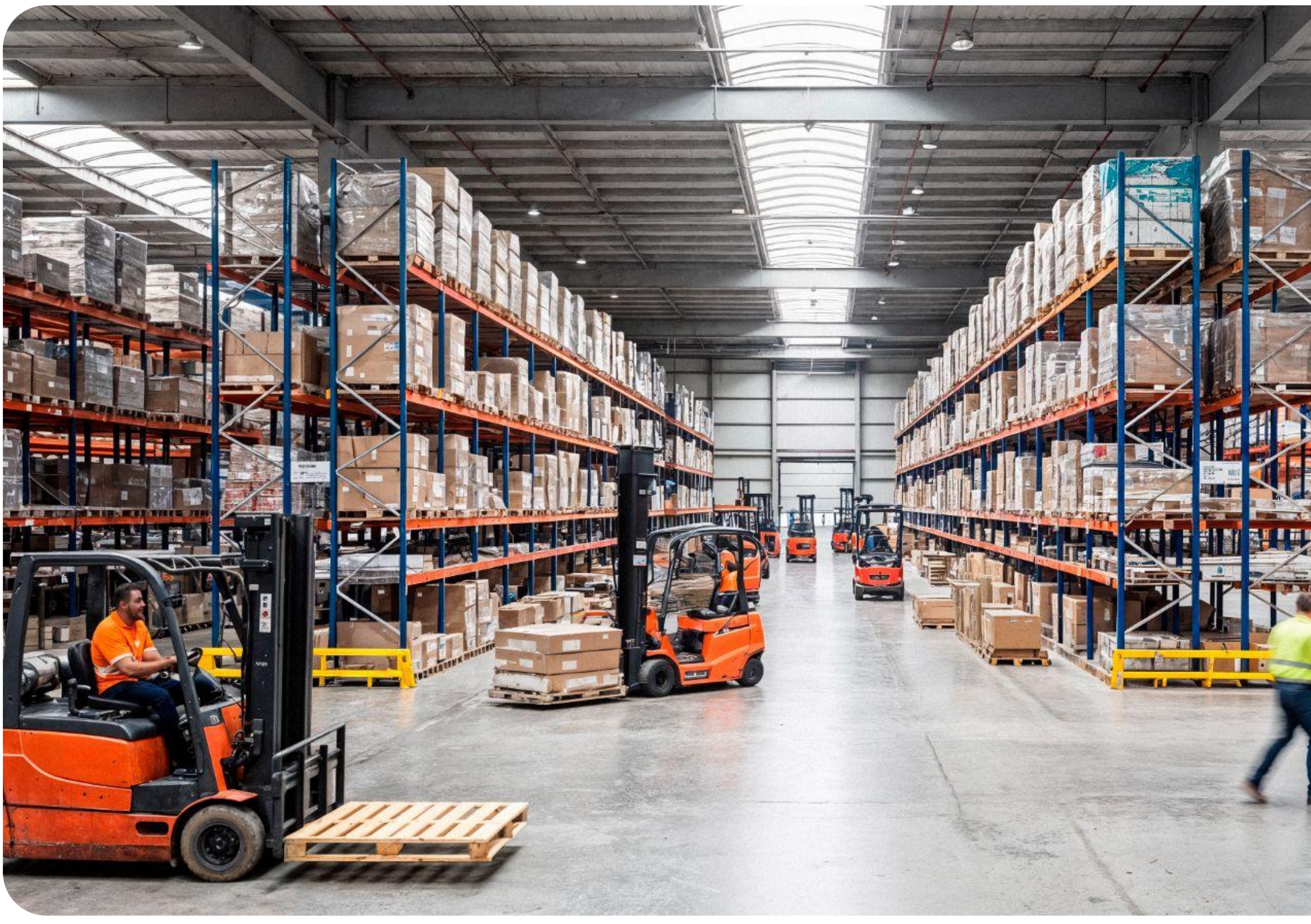
How Rappit delivers custom WMS solutions that adapt to your business

The Rappit approach to building mission critical solutions



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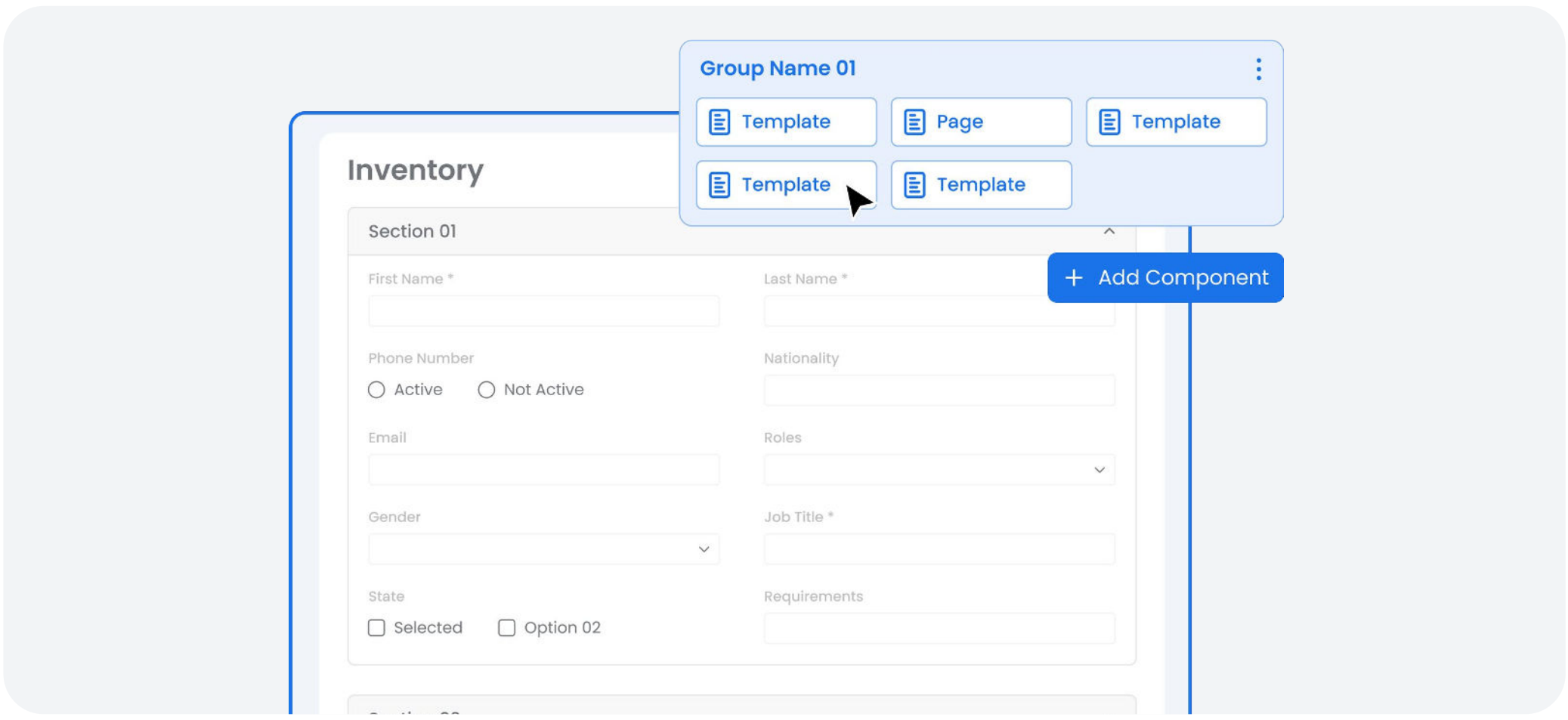
Chapter 1

Introduction

WMS: a mission-critical solution for distribution chain companies

Distribution chain companies operate in an increasingly complex environment where customer expectations for **fast, accurate fulfillment** continue to rise. Success requires operational excellence across every aspect of warehouse operations - from receiving and inventory management to picking, packing, and shipping. Today's winning businesses unlock operational excellence by turning every warehouse process into data—fuel for **smarter, rapid-fire decisions**.

The future belongs to those who leverage **real-time data and AI** to automate decisions, optimize workflows, and thrive in uncertainty. Diving deeper into the details of what a company does often reveals unique characteristics or specialized capabilities that differentiate it from the competition. When selecting a WMS, it's vital that companies select a **solution that supports their unique processes** and enables differentiating capabilities to be easily added.



Most off-the-shelf WMS solutions are stuck in the past, forcing companies to fit their business to rigid systems, instead of building a WMS that adapts to their business. This results in missed opportunities: generic systems lack agility and block access to the hidden insights buried in warehouse operations—**insights that can drive faster fulfillment, better inventory accuracy, and higher productivity.**

Rappit's custom WMS fuses **actionable intelligence directly into every warehouse process**. Leaders benefit from **predictive analytics** to proactively optimize staffing and slotting, eliminating bottlenecks before they occur. On the floor, intuitive, AI-powered workflows streamline picking, packing, and returns—unlocking smarter, faster execution for frontline teams.

Automated insights and alerts transform decisions from **reactive to strategic,** so staff stay focused on what matters most: productivity, accuracy, and a consistently superior customer experience. With Rappit, businesses deploy **a truly "thinking" WMS** that accelerates fulfillment, grows profitability, and positions the operation to outpace tomorrow's demands.

	Off-the-shelf WMS	Custom WMS
Built for your unique business processes	✗	✓
Highly adaptable, supports differentiating capabilities	✗	✓
Seamless integration with existing systems & third-party apps	✗	✓
Easily scalable and future-ready by design	✗	✓
Long-term value - easy to update and maintain	✗	✓
Focused on relevant features for business impact	✗	✓
Adapts to your business, preserving competitive edge	✗	✓

The right WMS pays for itself – Fast

Powered by intelligent analytics and AI, your WMS doesn't just tell you what happened. It shows you what's likely to happen next, flagging emerging trends in inventory and sales, anticipating seasonal surges, and actively recommending dynamic replenishment, labor shifts, and space optimization. How?

Real-time visibility

Make faster, smarter decisions with automations and live data

Omnichannel agility

Serve e-commerce, B2B, and in-store from one inventory

Faster fulfillment

Meet next-day and same-day promises with ease

Inventory accuracy

Eliminate stockouts, overstocks and missed orders

Reduced labor costs

Comprehensive testing and smooth implementation

Future-ready scalability

Cloud-native, automation ready foundation built for growth

Rappit's custom WMS is built for retail, manufacturing, e-commerce, and 3PL alike. Whether scaling new channels or responding to market shifts, your WMS orchestrates operations for peak performance across every business model. Unlike off-the-shelf solutions, Rappit's custom WMS adapts to your unique business needs, driving measurable ROI, while providing you with a future-ready competitive advantage.

[1,4]

67%↑
Productivity

99.9%
Picking accuracy

85%
Optimized space

Chapter 2

Essential WMS capabilities that drive results

Dimensions such as scope, industry focus, automation level, and type of inventory determine the nature and applicability of a certain WMS. Some WMS solutions support only basic inventory tracking, others provide **comprehensive supply chain visibility**. Certain types of operations, like cold chain storage, e-commerce fulfillment, and multi-channel retail require **specific business logic and integrations**.

Often, an off-the-shelf WMS is only optimized for a limited set of use cases. Therefore, businesses should carefully explore the **scope and features** of a WMS to see whether that system is a realistic option for their business. While there are huge differences in scope between various WMS solutions, a comprehensive WMS likely includes most of the following functionalities:

- Receiving & inbound processing
- Put away & storage management
- Real-time inventory management
- Order management & allocation
- Picking operations
- Replenishment & relocation
- Packing, consolidation & load building
- Shipping & outbound processing
- Returns and reverse logistics
- AI, Data & Analytics
- Control center & operations monitoring

In addition to the primary functionalities, there might be **supporting functionalities** and capabilities such as these:

- **Labor & workforce management**
- **Slotting, replenishment & warehouse**
- **Complaint & nonconformity handling**
- **Value-added services & kitting**
- **Parcel, freight & multicarrier management**
- **Special inventory & compliance handling**
- **Shipping and outbound processing**
- **Production & manufacturing integration**
- **Automation, robotics & MHE integration**
- **Advanced technology enablement** (realtime tracking)
- **Analytics, workflow & sustainability**

This list is not exhaustive, but gives an indication of what can be in scope for a **typical WMS solution**.

Chapter 3

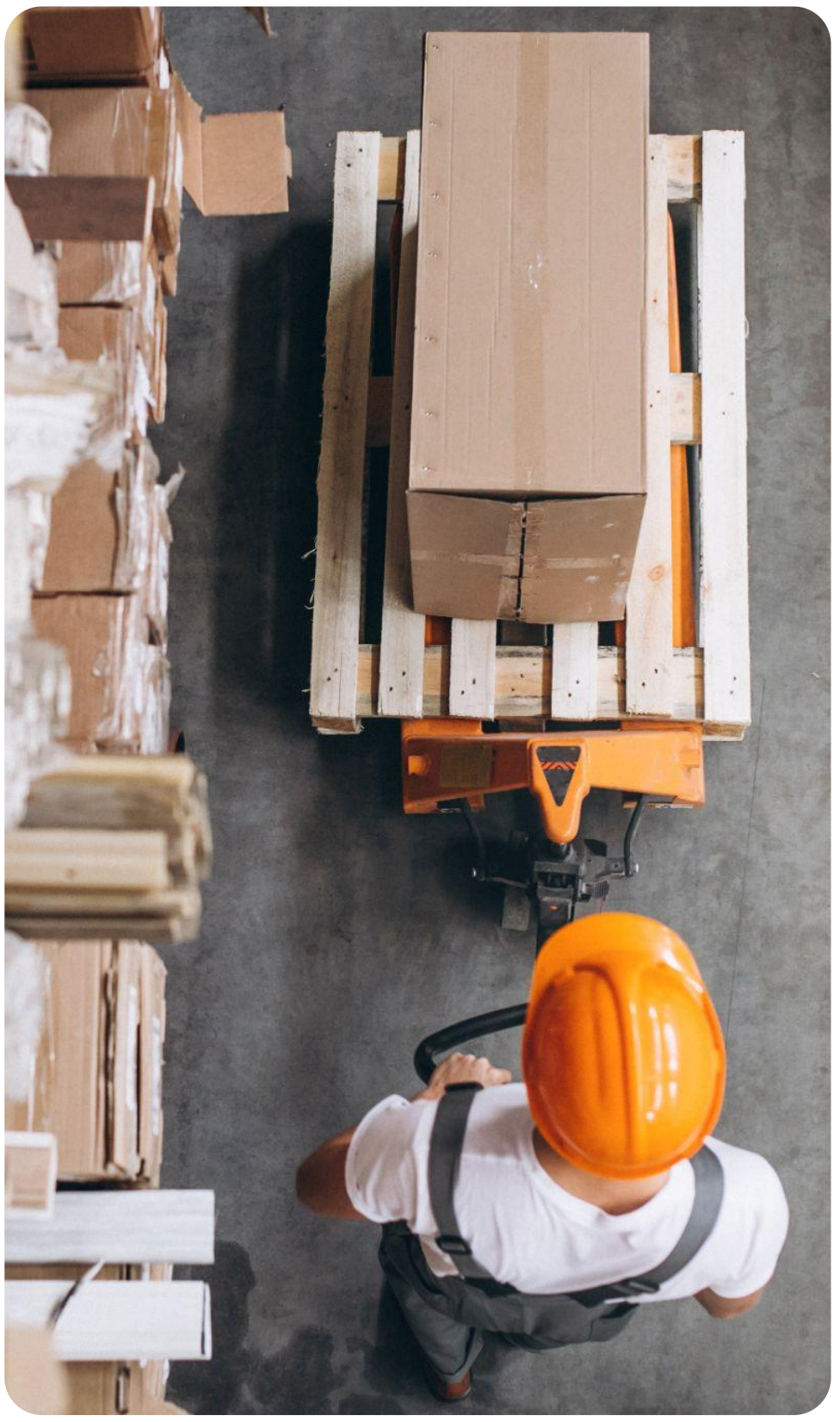
When to consider a new WMS

Today, **flexibility** is a fundamental requirement for a core system. It allows a business to stay competitive by continuously aligning with new market opportunities and business models, as well as new **requirements around compliance and documentation**. Many businesses operating in the distribution chain, however, are hindered by inflexible legacy systems that have monolithic architectures and run on older technologies. They lack real-time visibility, struggle to integrate, and can't keep pace with game-changing advances like AI. Embedded AI in WMS means razor-sharp demand forecasting, lightning-fast picking and packing, automated quality control, and robotic "dark warehouse" efficiency—all in real time. Many legacy systems rely on a generic, data-centric user interface that is not designed with the user in mind or optimized for the job at hand. Users have to perform a lot of unnecessary clicks to achieve their objectives. This increases the risk of error and delay and often causes employee and customer dissatisfaction. Younger employees in particular are accustomed to the **modern, user-friendly, task-driven user interfaces** of their personal devices. They increasingly expect a high level of usability from the systems they work with.

In addition, on-premise legacy WMS solutions with monolithic architectures are not designed for a cloud environment and prevent an organization from maximally benefiting from cloud-native capabilities. Unlike most legacy systems, a **cloud-based infrastructure** can easily **scale up and down** with the application load and provides the ideal foundation for integrating AI and other modern technical innovations. The cloud removes many of the barriers to adopting new technologies, making it more affordable, efficient, and less resource-intensive to do so. API-based integration with data analytics tools, for example, makes it easy for companies to take advantage of **data-driven** decision-making.

Companies that choose cloud-native modernization will be rewarded with a robust but flexible architecture that enables **seamless, event-based automation**, and easily exposes WMS functionality to **multiple** types of **devices**. Cloud-native WMS unleashes real-time mobility for every stakeholder. But that's just the start—**agentic AI** now automates repetitive tasks, suggests instant optimizations, and empowers teams to act faster and smarter. Employees, partners, and customers get not just data, but actionable decisions at their fingertips.

There are countless ways in which cloud-native WMS solutions improve agility and boost operational excellence while lowering costs. Companies that are hemmed in by legacy systems and unable to take advantage of the latest innovations will need to **modernize** to ensure they can **continue to thrive** in the uncertainty of today's business climate.



"Rappit is not only a very skillful supplier and developer, but also a very good partner, waking the extra mile and providing world-class services across the world and around the clock "

Michael de Rijk, CEO, NewPort Tank Containers

Chapter 4

The solution: off-the-shelf or custom?

Implementing a new core system is a serious undertaking that requires the right preparation. First, you'll need to **analyze your business requirements** and achieve a shared understanding of what makes the business unique and competitive. Research should then determine if a standard off-the-shelf solution can truly address these **unique needs**. Next, a full **cost-benefit analysis** must factor in budget, time constraints and the long-term strategic value. If that analysis proves what most leaders in high-stakes operations already know, that off-the-shelf systems can't deliver the competitive edge you need – the answer is clear: you build a **custom, future-ready WMS with Rappit**.

Rappit doesn't just "develop software" — **we partner with you** to build the core system that becomes your competitive advantage. We bring deep domain expertise, a battle-tested rapid application development platform, and a track record of delivering mission-critical systems for industry leaders. We know what works because we've built it; we know what's next because we're already doing it. While you stay focused on the what — your strategy, your goals, your vision, Rappit owns the how with precision execution, relentless quality, and the ability to turn innovative ideas into operational reality, faster than anyone else in the market. **We don't adapt your business to fit software – we build the software around the way you win.**

Evaluating your options

Analyze business needs
Understand your unique business requirements and competitive advantages

Explore solutions
Research options and conduct a cost-benefit analysis

Consider custom development
A custom WMS may be necessary for differentiation

Engage a partner
partner with an enterprise software provider for expert development

Chapter 5

How Rappit delivers custom WMS solutions that adapt to your business

Rappit isn't just a vendor, it's a competitive weapon in your corner. Building a custom, future-proof WMS demands **deep collaboration**, **total transparency**, and **complete alignment** between your vision and the people bringing it to life. That's why **industry leaders like Hoyer, Omoda and Plukon choose Rappit**. With decades of experience designing and delivering mission-critical, cloud-native warehouse systems using the latest technologies, we don't just support your existing differentiators, we help you create new ones. Our WMS solutions are **engineered around the way you win**, giving you the precision, agility, and resilience to dominate in an industry where speed and adaptability decide the winners. Rappit's teams can work side-by-side with your people or operate as a fully integrated extension of your team, seamlessly **filling capability gaps, accelerating delivery**, and keeping projects on course. The result: a system that doesn't just keep up with a rapidly changing global logistics environment — it puts you ahead of it.

Discovery phase 1

Writing of the requirements for the new system and creating an implementation strategy

Design phase 2

Defining the high-level system architecture

Minimum Viable Product (MVP) phase 3

Development begins with the first module which typically starts by developing an MVP

Develop & deliver phase 4

Rappit's software development methodology ensures a high-quality result

Quality assurance phase 5

Comprehensive testing and a smooth roll-out process

Maintain & adapt phase 6

Ongoing monitoring and maintenance

Chapter 6

The phases of the process

Discovery phase

The first step in Rappit's approach is the Discovery Phase. Our architects and business analysts use an agile and iterative way of working which means that not every detail will be defined at the start, rather, they will be **refined throughout the course of the project**. This ensures maximum alignment and creates an optimal foundation for a successful implementation.

The team starts by mapping requirements and building an implementation strategy. Now, with AI-led reverse engineering, Rappit can rapidly generate a new, **future-ready** system skeleton from the legacy system.. No need to start from scratch.

Understanding the scope and structure of the old system will give the team an idea of how to divide the full scope of the project into iterations, and in which iteration(s) the old and new systems will work together. This ensures a more **controlled and seamless process** that will have less impact on business as usual.

A pitfall to avoid at this stage is to not allow the old system to act as a template for the new. The purpose of analyzing the existing WMS is to capture requirements only, its structure must not limit the team's creativity when imagining the capabilities of the new system. The Rappit team's deep and broad **expertise creating modern WMS solutions** will help avoid this pitfall.

Key outcomes

During the discovery phase, the following elements should become clear:

Key requirements

What makes the business unique? What is the desired business impact of the new WMS? What is the purpose of the high-level features? Who are the target users? etc.

Scope

Determine objectives and full scope of the solution.

Dependencies

Determine dependencies with other systems. Which integrations are required with other systems in the company or in the supply chain?

Implementation method

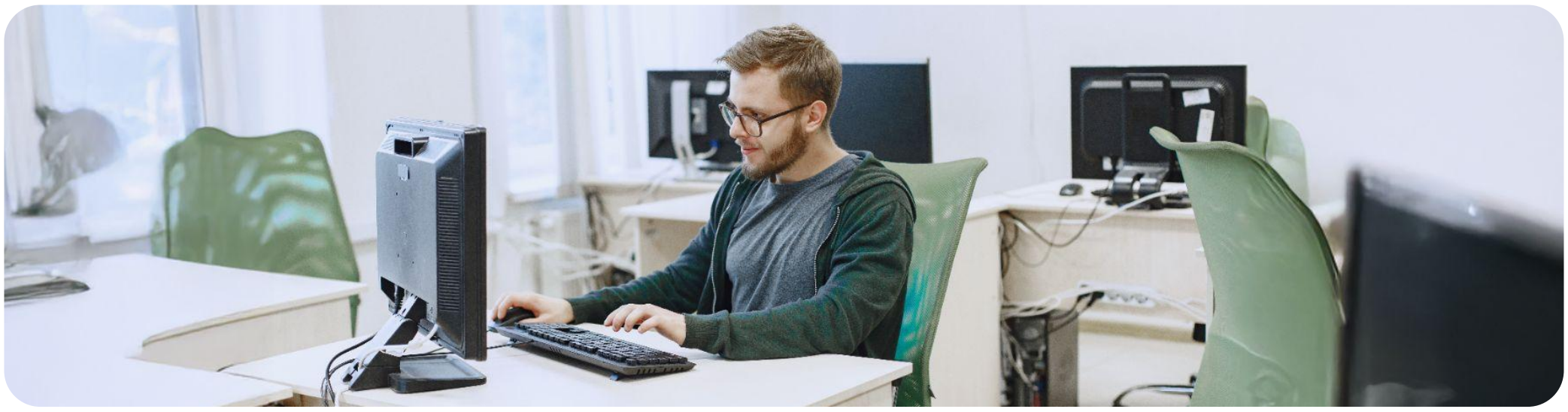
Determine options for co-existence of old and new systems to enable a gradual and phased implementation. Determine the high-level implementation approach across the organization.

Trends and regulations

Understand where the industry is headed and make sure corresponding key requirements are taken into consideration in the new system.

High-level effort indication

The high-level features as defined are grouped in complexity buckets. The result is a high-level effort indication that can help determine budget needs and expected timelines.



Design phase

System architecture

Next is the design phase in which we **define the high-level system architecture**. This describes the road to success and is aimed at reducing risk and uncertainty. With our new AI-led reverse engineering capabilities, **prototyping happens at record speed**—shifting development from waterfall to agile. Fast iterations cut risk and let teams quickly validate ideas, making every step in the design phase smarter and more responsive.

A key component of the high-level system architecture is the underlying infrastructure. When implementing a WMS, Rappit uses a robust infrastructure that has been proven over many years. This **technical infrastructure runs on Google Cloud Platform (GCP)**, which is well-known for its reliability and innovation. Rappit is a Google Cloud Platform Premier Partner with achieved specializations in “Application Development”, “Data Analytics” and “Infrastructure Services”. Rappit can be easily extended with data- and AI-driven Google solutions for the distribution chain.

As part of the project, Rappit will also ensure all data objects follow uniform standards, creating a **strong foundation for data exchange** by the system.

Another important element of the system architecture is the **integrations**. Today, no core system runs in isolation; it is embedded in the internal application landscape and the external supply chain. Rappit has ample experience building connections with **3rd party applications** and provides **REST APIs** on top of the application tables to enable quick, standardized connections with other systems.

“With the new, intelligent ERP system developed by Rappit in close collaboration with Omoda, we are now able to achieve double-digit revenue growth! While also realizing double-digit efficiency gains. “

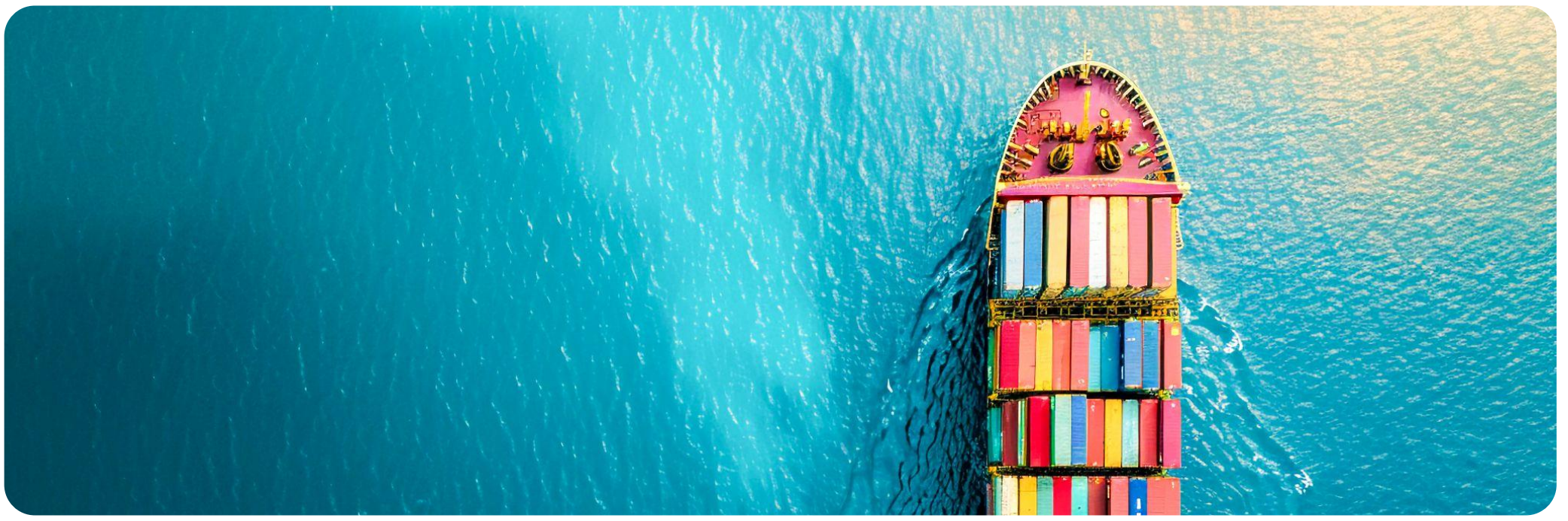
Jan Baan, CEO, Omoda

Search, security, and flexibility

The system should also provide fast and intuitive global search capabilities, allowing users to **view, sort, search, and filter records efficiently** across multiple columns. To ensure smooth performance even with complex queries, Rappit integrates a specialized search layer **optimized for web-based searches**.

To further optimize the WMS for performance, security, and maintenance, it's vital that the architecture and code are developed in a **secure and compliant** way according to best practices. Best practices ensure that code is developed securely in the correct layer of the system architecture, ensuring consistent data integrity as it moves through the system. Normally, manually enforcing best practices would require significant effort from developers. However, Rappit has encapsulated this knowledge into **ready-made tools and frameworks**, which it applies to customer projects. This reduces setup time and ensures that the code is always consistently structured and provides **built-in data integrity and security**.

In the final phase of high-level system design, it is important to identify which aspects of the system require more flexibility than others. Instead of being hardcoded, these areas may have to be supported by a dynamic, model-driven approach to adjusting the business logic, such as a workflow engine or business rules engine. This allows organizations to separate certain types of business logic from the core software code, so **changes can be made on the fly** without requiring a full system update. This gives the business the control it needs to **stay agile in the face of rapidly changing market dynamics**.



Minimum Viable Product (MVP) phase

When the high-level architecture design is complete, development begins with the first module. In larger projects, Rappit typically starts by developing an MVP. This initial module is small in scope, but large enough to be put into production. The objective is to **showcase what's possible** to the project board and provide the business with an **early success**. During the MVP phase, the teams align more closely, and learnings are used to improve the way of working together, when developing subsequent modules.

During the detailed design phase of the MVP and later modules, the user experience is taken very seriously. Rappit's **UX experts** and developers work alongside the business to quickly gather requirements and create a prototype of the UI, workflow, and related logic, which are all designed from the user's perspective. This makes the system **intuitive, visual, workflow-oriented**, and focused on getting the job done efficiently. In this phase, the starting point for the design is the task to be done by the user. During the execution of this task, the user will be guided by the system with suggestions and recommendations. If applicable, **specific interfaces for mobile** can be considered to maximize user efficiency.

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Develop & deliver phase

Rappit's application development platform

When the design work is completed, the develop & deliver phase starts. In this phase, Rappit's software development methodology ensures a high-quality result. Rappit uses the **Agile Scrum methodology**, meaning work is broken into small tasks (backlog) and tackled in short work cycles (sprints). The team organizes and tracks progress using tools like Atlassian Jira (task tracking), Atlassian Confluence (documentation), and Xray (testing management) to ensure a smooth process.

Rappit has **three products** that are important enablers for success in this phase and will be leveraged based on the requirements and scope of the project:

rappit developer

application modernization & generation

Rappit Developer **streamlines the development process** from use case definition to coding. It ensures that requirements are well-structured and provides a visual modeling layer for easy configuration. Developers can also add custom logic without limitations.

The platform enables fast and efficient development by automatically generating complex, architecture-specific code. It supports breaking down applications into smaller, independently deployable components that still share the same database. This is ideal for transactional core systems that rely on database performance and integrity while avoiding the rigidity of a monolithic architecture.

Rappit Developer combines the maintainability of microservices with the stability of a monolith. Applications built with it **generate source code using popular open-source frameworks**, making them easy to package and deploy in containerized environments like Cloud Run. Additionally, it **automates essential development tasks**, including generating test scripts, sample data, and release notes.

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Premier Partner
Google Cloud

rappit composer

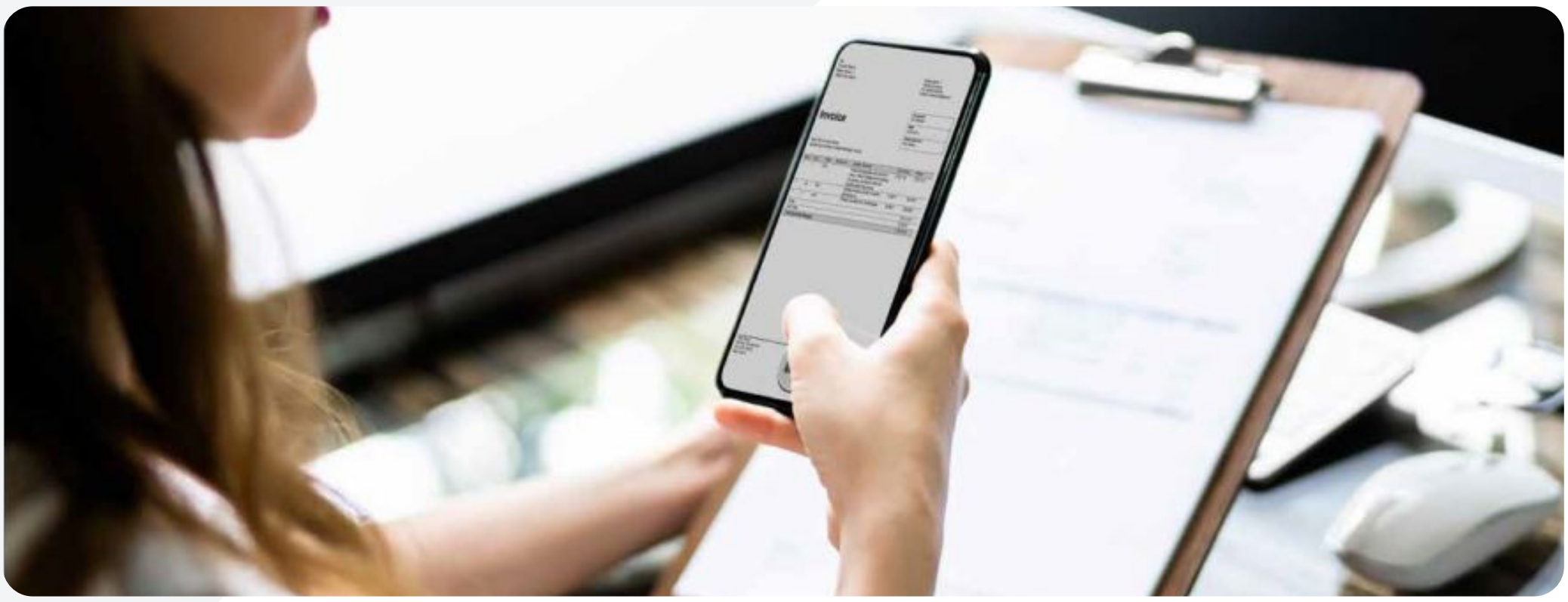
no-code apps & workflows

Rappit Composer provides a model-driven environment for executing dynamic business logic, such as **workflows, business rules, and task-driven mobile apps**. Dynamic business logic can be modeled in Rappit Composer and maintained by separate business teams decoupled from the software release cycle. This enables **flexible adjustments** to be made to business logic for tasks that are dependent on things like changing business requirements or **complex automated processes**.

rappit undoc

automate document processing

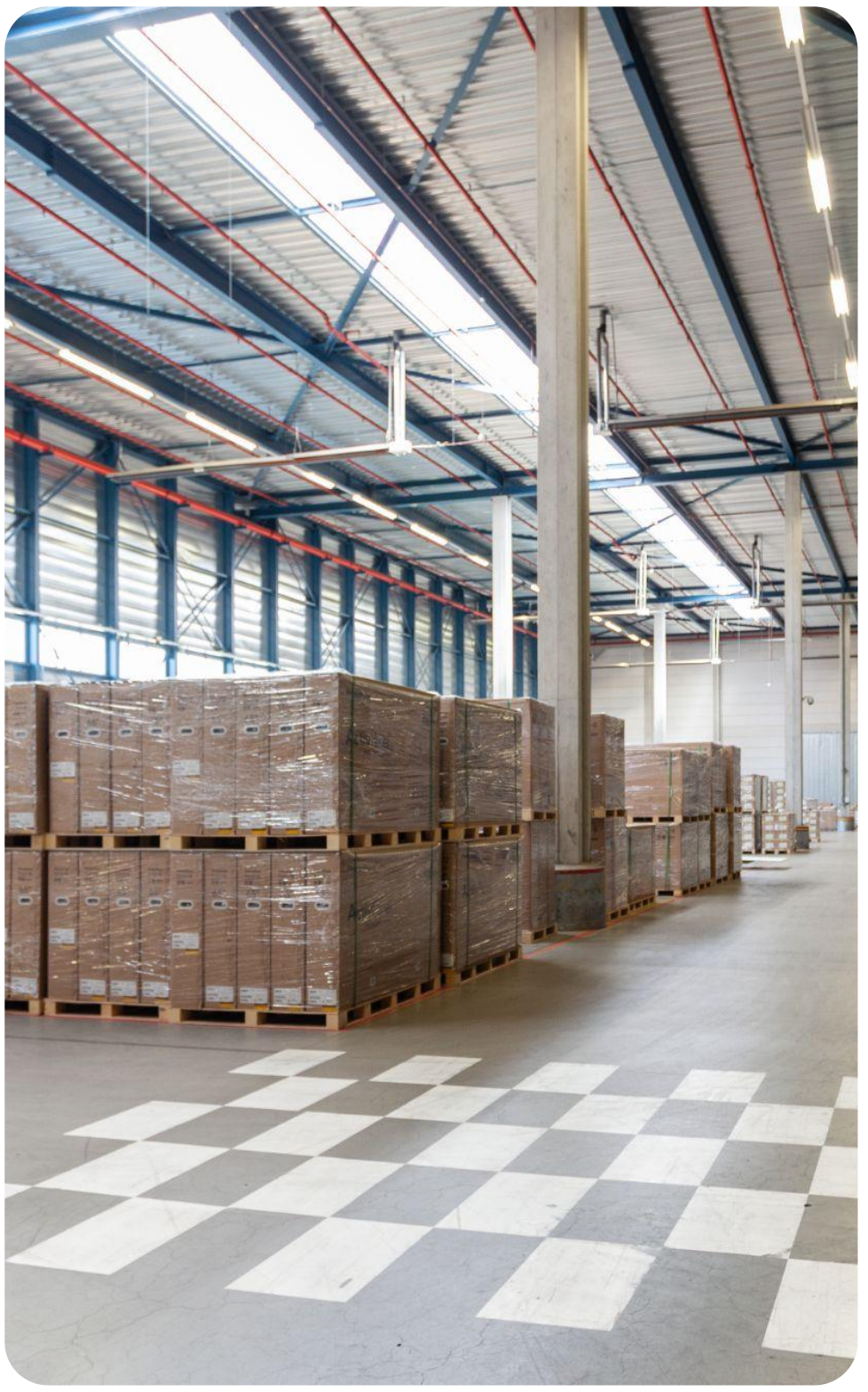
Rappit Undoc is a set of capabilities for **intelligent document recognition**, bridging the gap between structured data and the unstructured world of documents. Powered by (gen)AI, Rappit Undoc **efficiently processes and recognizes diverse document formats**. This is very useful in the distribution chain industry where varied document types are still integral to operations.



Quality assurance phase: Ensuring flawless performance with comprehensive testing

An important aspect of the delivery stage is quality assurance. **Testing is done on multiple levels at numerous points** during the project. The first level of testing is done by the developer on an individual ticket basis. The second level is done by the Rappit technical team for each internal release. Additionally, automated testing and dynamic application security testing is performed in the continuous integration/continuous deployment **(CI/CD) pipeline**. The third level of testing is done by the user acceptance testing (UAT) team. Typically, the UAT team consists of key business stakeholders, and it is the last quality gate before the new release is deployed to production.

Once the solution is in production, a final check will be performed to confirm that critical features such as logging in and loading data work correctly. If the new system is replacing an old one, **data migration scripts** will be executed to ensure a smooth transition for users. Depending on the type of engagement it is, either Rappit or the customer will handle these final tasks. If necessary, **end-user training** will be provided to ensure a smooth roll-out process.



Testing

From developer checks to user acceptance testing, Rappit's comprehensive testing ensures high-quality results.

Final check

Post production checks, data migration, and a smooth roll-out process.

> **“I have never experienced this. A vendor that goes faster than we, and delivers within budget! “**
>
> Gordon Smit, Global IT Director, Hunkemöller

Maintain & adapt phase

Once the software is successfully implemented, the maintain & adapt phase will start. **Ongoing monitoring and maintenance** is necessary to ensure continuous availability and security of cloud-based systems. Depending on the type of engagement, this service can be provided by the Rappit Cloud Operations and Support team. All Rappit services are **ISO27001-compliant** and yearly validated by an authorised certification body.

In addition to this, Rappit can deliver **SOC2-assured Cloud Operations and Support services**, including a SOC2 type II report. This is particularly interesting for companies that perform work related to critical infrastructure or essential services or otherwise have strict security requirements. In this service model Rappit will continuously perform system-wide control activities to **ensure security**, availability, confidentiality, processing integrity, and privacy.

Periodically, an **external auditor** will assess the design and operational effectiveness of our controls and confirm its findings in an official SOC2 report.

Our Rappit products will be delivered with SOC2 assurance in 2026 when the NIS2 directive comes into effect in Dutch law.

“Rappit combines rapid application development expertise, deep domain knowledge and innovative Google Cloud capabilities. This is a winning combination when you are looking to develop a fit-for-the-future business critical system!”

Jan Baan, CEO, Omoda

Chapter 7

Final thoughts

Modernizing your warehouse management isn't just about chasing the next technology trend—it's about delivering measurable, bottom-line results.

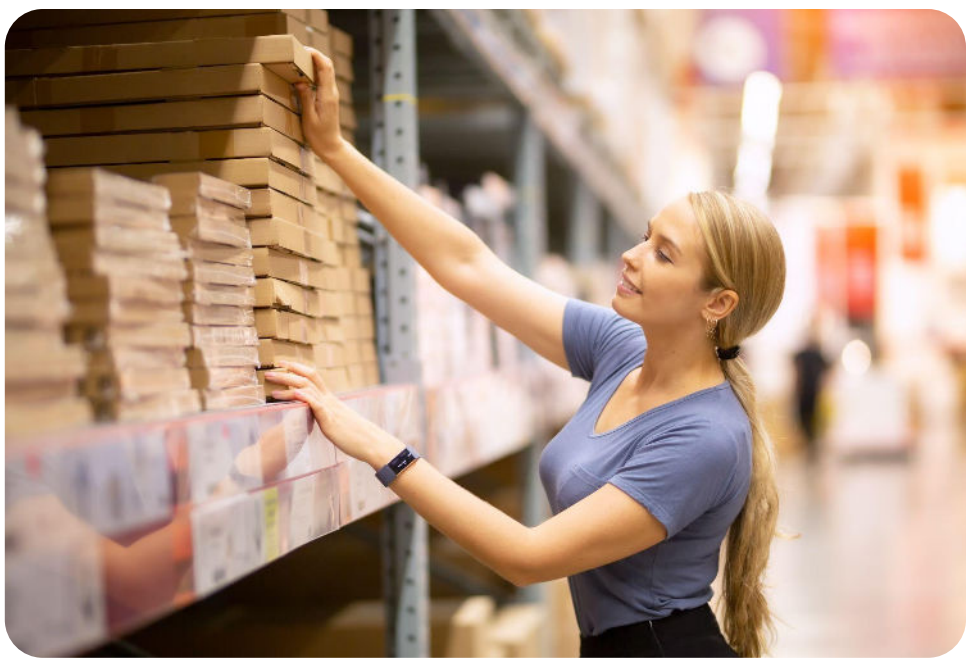
Across the industry, the numbers say it all:

- 68% of businesses are accelerating warehouse modernization with automation, transforming warehouses from cost centers into growth engines. [1]
- Automation can **boost warehouse workforce productivity by up to 67%**, freeing teams to focus on value-adding work—not just basic tasks. [1]
- Advanced WMS solutions now **deliver pick accuracy rates hitting 99.9%**, driving down costly errors and returns. [4]
- Companies leveraging automation have even reported up to 85% more effective use of warehouse storage space, without expensive expansions.

Yet the real unlock comes from how you build and adapt your technology.

Rappit doesn't just help you keep pace with change—we empower you to shape it. Our intelligent, forward-looking approach to application development means your WMS investment isn't just modern today. It stays **modern, future-ready, and perfectly aligned to what drives your bottom line**.

To **stay competitive in your industry**, you need a WMS that's as fast-moving and adaptable as your business, the Rappit way delivers real results—**measurable, scalable, and built for what's next**.



4x faster prototyping & development

Continuous modernization, future-ready

Seamless, cloud-native integration

Chapter 8

Real world customer case

Omoda - Modernizing a legacy ERP to facilitate a retailer's growth ambition

Omoda, a high-end fashion retailer with over 32 physical locations in the Benelux and online presence across Europe, faced critical challenges with their 15-year-old legacy AS/400 ERP system. The monolithic system, originally built to process hundreds of orders per hour, needed to handle multiple orders per second during high-volume events to support the company's growth ambitions.

Outdated technology held them back—Omoda built a **custom WMS/ERP** to preserve its unique edge, **shatter legacy limits**, and unlock faster fulfillment, true omnichannel agility, and **scalable growth**.

Together with Rappit, Omoda didn't just upgrade—they reinvented.

Designing and delivering a modern, intelligent system —complete with a custom Warehouse Management System, advanced order fulfillment, and powerful data analytics, empowering Omoda to:

1. Scale on demand: Seamless performance during order surges—even on Black Friday.
2. Boost accuracy: 40% fewer picking errors.
3. Unlock growth: Revenue up over 30%.
4. **Accelerate delivery: Omnichannel speed customers notice.**
5. Strengthen workforce: Same headcount, double-digit productivity gains.

Omoda's story is proof: When your system adapts to your business (not the other way around), you unlock **efficiency, agility and sustainable growth**.

Read building a next-level WMS/ERP system.

30%↑
Revenue

40%
Fewer picking errors

32
Physical locations

Take a deeper dive

Is your WMS driving growth — or holding you back? Rappit builds future-ready, custom WMS platforms that crush inefficiencies, supercharge fulfillment, and give you the agility to **outpace competitors**. Don't settle for "keeping up" — partner with us and **lead the market**. Let's start building your next-level operation today.

Rappit is a leading independent software provider. Building on a proud heritage, we are experts in developing Cloud based Enterprise Software modernization solutions, that include Custom Made Applications, Data Analytics, Artificial Intelligence and Machine Learning. Based on the Rappit Platform, consisting of amongst others Rappit Developer and Rappit Composer, we enable our customers to create unique business value.

Rappit serves a customer base consisting of multinationals and medium-sized organizations, mainly in the Manufacturing, Supply Chain & Logistics, and Retail & Wholesale industries. Our Rappit Platform also supports ISVs and System Integrators in building world-class applications.

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