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POINT OF SALE:
THE HEART OF RETAILING

Analysis and insights on the latest trends in retail:
artificial intelligence, Quick Service Restaurants, and more

Capgemini has deep expertise in retail and digital transformation. This is a proficiency developed over countless projects, including those centered on a critical element of retail technology: the Point of Sale. Whether it is called Point of Sale, Point of Service, Point of Contact, or some similar name that encompasses both online and offline purchases, the goal is a financial transaction and, regardless of the name, the interaction with the customer is what ultimately matters most.

The market for Point of Sale (POS) solutions has changed dramatically over the last couple of years. Acquisitions, omnichannel strategy, demand for a lower Total Cost of Ownership (TCO), introduction of cloud-based POS solutions, and the need for real-time analytics capabilities have transformed the industry. As a result, retailers are increasingly confused about the route to take when selecting a new POS solution. Just taking the most recent *Forrester Wave: Point of Service* report or Gartner Magic Quadrant can provide a starting point with some insight on leading POS vendors, but do these lists identify the solution that fully meets the retailer's requirements? Because of the lack of both time and resources, retailers tend to select POS vendors recommended by Forrester and/or Gartner. Even then, comparing solutions against retailer requirements remains a time-consuming task. Since most retailers perform an evaluation of their POS solution only once every 10 to 15 years, there is limited knowledge and experience available to complete the evaluation internally.

To help retailers accelerate the POS vendor selection process, Capgemini has developed a proven methodology. The Capgemini POS tool, supported by Intel, is a crucial part of this process. Using this tool and Capgemini's methodology, retailers are able to reduce the time taken from identifying a long list of potential vendors to making their final selection. More than 10 years ago, Capgemini started collecting data about POS solutions. Initially a local initiative with just a few global POS vendors, over the years Capgemini has expanded this process and incorporated all global and select regional vendors. An extensive questionnaire is sent every two years to the market, and the acquired data is added to Capgemini's POS tool.

Intel has positioned the following market trends as influencing the need for innovative POS solutions:

- New store experience-focused capabilities in an era of omnichannel commerce
- Customer demand for frictionless experiences, including self-service and contact-free payments.

The refreshed version of the tool incorporates artificial intelligence (AI) as well as Quick Service Restaurant (QSR) considerations and insights.

Retail industry consolidations, omnichannel strategies, demand for lower Total Cost of Ownership (TCO), cloud-based Point of Sale (POS) solutions, and the request for real-time analytics capabilities have transformed the industry.

POS: generating targeted data

For decades, the role of the cash register didn't change much. It was only in the last 25 years, with the arrival of the Internet, that POS became capable of doing much more than just registering transactions and keeping revenue secure. POS is now at the heart of retailing and connects to all downstream and side-stream systems.

Fast forward to today's retail environment, new technology has massively changed the look and feel, as well as the usability, of registers. Customers now can be served in any part of both the physical and the online store using mobile technology.

Looking back in history, we can still see that the essence of POS hasn't changed. However, the Internet of Things and other technologies like AI deliver capabilities that address the growing need for real-time data across POS. This creates actionable insights on the spot as conditions change. The targeted data that is generated will then result in happier customers.

There are many different vendors with different solutions that target customer and market needs. But what are the diferentiators and which vendor will suit the client's requirements best? For example, are there unique elements in offering an omnichannel solution and what are the common threads between vendors? This section provides a unique insight into the Capgemini POS tool, its wealth of information, and an analysis of key aspects from 20 different POS vendors.

Globalization

Given the mature state and slow growth of domestic retailer markets, global expansion has become one of the hottest growth strategies. Gaining access to new customers and growing markets will boost sales that strengthen a company's purchasing power via programmatic promotions and access to larger volume discounts.

More than 50% of the vendors included in the Capgemini Point of Sale (POS) tool currently have a clear global presence.

Global presence demands a worldwide organizational structure and associated connecting processes and IT solutions. If the target market doesn't differ much from existing markets, it can be a good choice to deploy a single, multilingual-ready, POS vendor solution that consistently meets varying country-specific requirements across international deployments.

We notice that international retailers are struggling with the questions: "Should I deploy one single solution across the globe?" and "Can I use a single template for my global business?" It's clear that international retailers looking to the future prefer to have a single solution to support their business but are also reserved because of local differences.

Leading innovation

In response to the changing retail market, being able to quickly adapt to new trends and opportunities is increasingly critical for retailers. Creating a smart retail environment that offers a seamless customer experience is also becoming key for most businesses. A POS solution must not only adapt to the new trends in retail but can also be a real change driver. Offering a mobile POS and self-service checkout is no longer a unique differentiator. To be the leader in the sector, continuous innovation is required where store automation is an important element. The POS solution is considered the heart of operations and is seen as a single point of information by both store employees and customers and should provide a consistent picture across all sales channels. Some of the trends identified by the Capgemini POS tool are related to actionable real-time data insights, customer loyalty integration, omnichannel solutions, and innovations based on cloud technology. See the cloud section below.

40% of the analyzed vendors already offer a solution based on cloud technology.

Implementation

A new POS implementation can have significant impact on the business. Business processes should be evaluated to determine whether they need to adapt to a new business model, whether the POS solution should be tailored to the existing one, or a combination of both. This contradicts the trend of staying with minimal changes using out-of-the-box systems. Regardless, the implementation may be complex and should not be underestimated. Most of the reviewed vendors offer end-to-end support services during the roll-out phase. Others rely on the customer's capabilities, with or without external resources from an experienced system integrator. The lead time is another important consideration. Adapting to the business needs and the chosen vendor, the roll-out period can vary from four to 12 months. Capgemini offers over 20 years of implementation experience and often serves as the integration partner on behalf of retailers or vendors, using its standardized multi-phased approach.

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Capabilities and vendor maturity should also be taken into consideration when kicking off a POS evaluation. Today for example, the number of vendors that can provide a POS cloud solution is very limited. On the other hand, are retailers ready to run their POS from the cloud? The answer will differ per type of retailer, location, connectivity, and solution design.

Version control

Upgrades to a POS solution are essential to keep up with business and consumer needs. Retailers should ask whether their company can take advantage of innovations made for other customers by bringing these into the commonly used core version, or whether they are better off developing their own solution totally separate from the others.

Furthermore, POS vendor upgrade lead time and frequency can hinder solution development and can cause inflexibility. Capgemini, therefore, strongly believes in a model with a limited number of versions throughout a roll-out program while maintaining optimal flexibility and striving towards standardization.

It's key to modern retail that vendors can respond quickly to new requirements.

Support

Support for store automation (such as POS) can be organized in different ways. As automation begins to impact second- and third-line support, it's crucial to have access to the right system knowledge either in-house or using third-party specialized service companies. 90% of POS vendors included in the POS tool offer first, second, and third lines of support. Very few POS vendors outsource their first-line support to third parties.

Furthermore, it's essential to manage the support on peripherals, e.g. Electronic Funds Transfer (EFT) terminals and scanners, in-house. From a store employee point of view, it's recommended to have a single point of contact for all POS-related questions or issues. Retailers look increasingly to reduce support costs by enabling remote management.

90% of the vendors do include in-house first-line support.

Artificial intelligence

While the trend towards self-service is enabling retailers to deliver better customer experiences, it also has its drawbacks. In some instances, retailers have experienced substantial revenue losses from self-service checkouts as customers look to cheat the system – for example, scanning cheaper items while putting more expensive items in their bag. Now retailers are looking to implement artificial intelligence (AI) to protect their revenues against self-service checkout fraud.

Using computer vision at the POS, retailers can detect fraudulent barcode use by customers and employees. A camera at the POS records anomalies and raises an alert to the store operators. By applying machine-learning techniques, retailers are able to improve the accuracy of algorithms over time – for example, so that computer vision systems can spot subtle differences in the variety of apples rather than just the type of fruit. But it's not just revenue protection that can be improved. These same techniques can also be used to automatically categorize the items in the customer's basket, cutting queues and saving time.

When combined with facial recognition software, computer vision also has the potential to further improve the customer experience through personalization, the tailoring of specific offers, and automatic payments. In Europe, these features will be strictly opt-in and systems will ensure that retailers are able to respond quickly to customer requests for detail on what type of personal data is being stored by the retailer in line with General Data Protection Regulations (GDPR).

Retailers are looking to implement AI to protect their revenues.

Unified commerce

The trend towards unified commerce – retail software systems which connect all inventory and customer data to all online, in-store and mobile sales channels – is driving many retailers to look into upgrading their POS systems. Unified commerce allows retailers to provide a consistent and personalized customer experience at every touchpoint, improving the customer experience, lowering costs, and driving revenues.

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Cloud

Like many other industries, retail is in the midst of the trend to move functionality out of the store and into the cloud. Cloud systems promise lower TCO and greater flexibility in terms of deploying applications across hundreds of stores. However, the reality for the vast majority of retailers is a mixed implementation with mission-critical functions like POS deployed locally and others like customer loyalty schemes and promotions offloaded to the cloud. Many retailers are conservative by nature and with many stores still experiencing unreliable network bandwidth, keeping POS systems on-premise seems like the safest option. If a POS doesn't work, the store must close. Also, for larger retailers, not all stores will be running the latest software and operating systems, meaning that a move to the cloud also necessitates expensive upgrades in order to set a new, consistent baseline for IT.

Cloud deployments promise lower TCO and greater flexibility.

Quick Service Restaurants

Quick Service Restaurants (QSRs) – food outlets offering minimal table service – are taking POS to the next level. While there are similarities with regular retail POS, QSR systems are much more complex. Firstly, there are multiple orders coming in from different touchpoints – web apps, mobile apps, digital kiosks, drive throughs, and walk-ins. Each of these contains multiple elements that must be sent to different locations within the restaurant to be fulfilled – the fryer, the grill, the drinks station, etc. – before they are brought back together for completion and delivered to the customer in a timely manner. QSRs are looking for expert guidance in how to manage these multiple integrations and roll out new technologies such as voice ordering, so that they can offer a unified customer experience across all order points.

In response, Capgemini has developed a POS tool specifically tailored to the unique requirements of the QSR industry. The tool incorporates all of the core elements and learnings from the regular retail POS tool with a host of new QSR-specific considerations – for example kitchen management, order tracking, and visibility. Using the tool, QSRs are able to pinpoint which POS features are most relevant to their business, enabling them to quickly arrive at a shortlist of suitable vendors, speeding up the tender process.

While there are similarities with regular retail POS, QSR systems are much more complex.

Future of Point of Sale

Although the world is changing quickly, the advances in retail and more specifically around POS systems are less volatile. The main purpose of the checkout has hardly changed over the last century. At the start of the 20th century, prices of goods were captured, and the total amount was calculated and paid. The purpose is virtually the same today. In the end, it's all about what has been sold, when it was sold, to whom it was sold, and against what price it was sold. However, the technology used for capturing transactions and making payments has changed over time and will continue to change in coming years.

In addition to its basic function, and as a consequence of omnichannel, a modern POS should support full integration with all downstream and side-stream systems in order to meet current and future customer demands, such as "never disappoint," "no more waiting in lines," and "easy shopping and simple checkout."

Today's example of a presumably futuristic store is Amazon Go. The so-called frictionless shopping experience allows customers to collect all their products and just walk out of the store when they are done. The Amazon Go app keeps track of all the products in the shopping basket and automatically charges the customer's Amazon account after he or she leaves the store. It's an interesting test case to take away one of the biggest frustrations of the consumer. The technology is available, either using RFID or a combination of computer vision, sensor fusion, and deep learning, as with Amazon Go.

The viability of frictionless shopping really depends on the type of business, costs, security, and market acceptance. Currently, the technology is best at keeping track of no more than about 20 people at a time and struggles to handle an item that has been moved from its place on the shelf. Generally, a "Go" store only runs smoothly when there are just a few customers or if they're moving slowly. Current implementations tend to work best in smaller stores purpose-built for the frictionless shopping experience, although many leading retailers are currently testing if this is viable in larger and existing stores. Later, expect to see new innovations like blockchain technology become more prevalent in transaction tracking.

Many leading retailers are currently testing whether it's viable to roll out frictionless shopping to larger and existing stores.

Intel technology for POS

While the benefits of advanced POS systems are undeniable, integrating new systems can pose headaches for IT.

Adding more and different devices often leads to four challenges:

1. Greater hardware cost and complexity resulting in an elevated Total Cost of Ownership (TCO)

2. Operating system cost and complexity that requires a complex model for sustainable support and additional training

3. Remote device management nightmares caused by a lack of centralized in-band access to retail platforms

4. Greater security risk as connected POS systems are more open to ransomware and security breaches.

Intel technology for POS can help retailers meet these four challenges head on:

1. Intel provides a common architecture from the smallest of devices through to the largest of servers supported by a flexible, global ecosystem

2. Intel supports most operating systems and multi-device application software

3. Intel Active Management Technology (Intel AMT) – a feature of Intel vPro Technology – provides multi-device remote management even when the power is off, the OS is inoperable, management agents are missing, or hardware has failed. The Intel vPro Platform TCO Estimator allows retailers to discover the potential savings they could make by deploying Intel vPro Technology

4. Intel offers end-to-end data security for POS, including Intel Software Guard Extensions (Intel SSG), allowing original equipment manufacturers (OEMs) to build security into their devices at the hardware level, while Capgemini builds rigorous security assessment into its POS evaluation tool.

In addition, Intel also offers the following technologies for POS:

1. Intel Solid-State Drives (Intel SSDs) for improved reliability compared to traditional hard disk drives

2. Devices that are ready to support Software-as-a-Service (SaaS) models

3. Advanced processors that support rich media

4. The Intel Distribution for OpenVINO Toolkit to accelerate the time to market for AI-driven POS applications.

Capgemini sees POS as the heart of retailing, both online and offline. Therefore, POS plays a crucial part in the Capgemini/Intel Smart Digital Store initiative and set of offerings. The Smart Digital Store enhances the physical store with digital capabilities to empower associates, engage customers, increase operational efficiency, and generate more revenue.

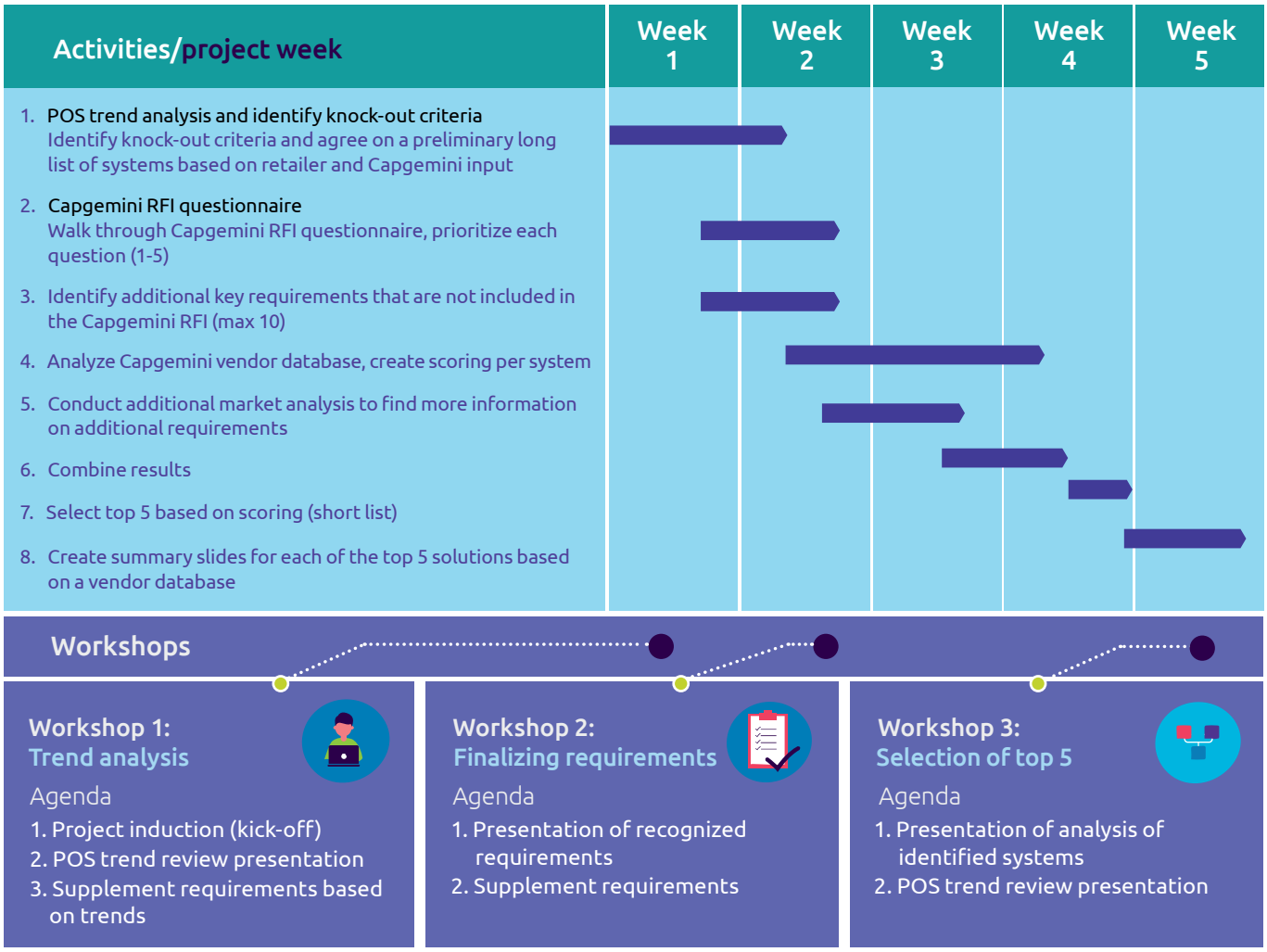
See also:
https://www.capgemini.com/service/the-smart-digital-store/

Capgemini POS evaluation process

To support retailers in their POS evaluation, Capgemini has developed an industrialized process. A crucial part of this process is the Capgemini POS tool.

The biggest benefit of the Capgemini process and approach is the availability of detailed information about the world's leading POS solutions. The combination of this information with Capgemini's extensive experience in POS evaluation processes and key requirements documentation makes it possible to provide a ranked shortlist of vendors to the retailer in just five weeks. In this timeframe, there's even time to add additional POS solutions from the local market if requested by the retailer.

Figure 1: Capgemini POS evaluation process – shortlist definition



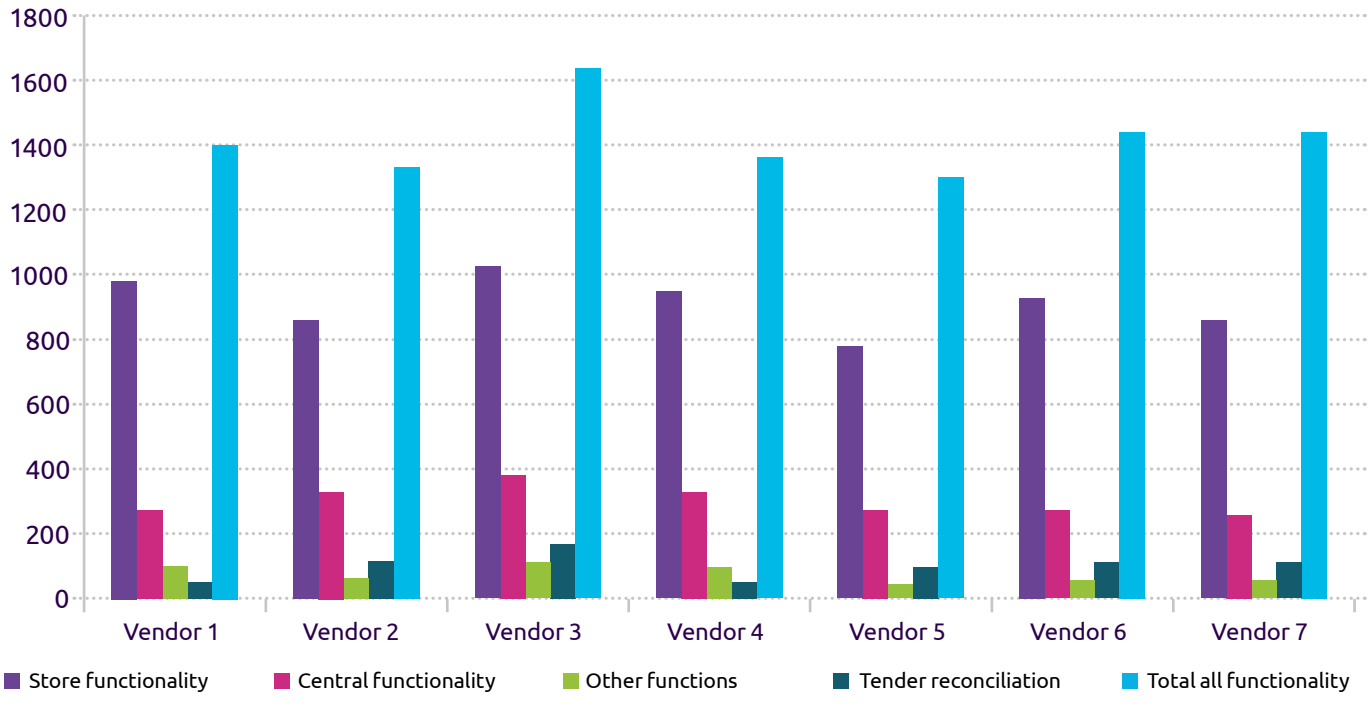
Approach and deliverables

The first part of the evaluation process focuses on functionality. Using a combination of more than 600 questions and priorities set by the retailer, Capgemini provides a weighted list showing the score per vendor. Since Capgemini has received detailed information from targeted vendors based on questionnaire responses, it can compare the solutions from these vendors against functional areas like tender, discounts, promotions, security, and financial management in its POS tool. See figure 2 for an example of an evaluation process for a major retailer. This graph not only shows the results, but also the flexibility, of Capgemini's POS tool.

Based on requirements from this retailer, Capgemini customized and added "tender reconciliation" – the process of reconciling disparate transactions – as a separate area to evaluate.

In addition to ranking functionality solutions, the tool provides information for comparing architecture, references, and omnichannel capabilities. Capgemini offers a transparent process that helps determine a desired shortlist and gives retailers added confidence in their decisions. This shortlist then becomes the basis for a Request for Proposal (RFP) process.

Figure 2: Results for four different functional areas and the overall scoring



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About Capgemini

A global leader in consulting, technology services and digital transformation, Capgemini is at the forefront of innovation to address the entire breadth of clients' opportunities in the evolving world of cloud, digital and platforms. Building on its strong 50-year heritage and deep industry-specific expertise, Capgemini enables organizations to realize their business ambitions through an array of services from strategy to operations. Capgemini is driven by the conviction that the business value of technology comes from and through people. It is a multicultural company of over 200,000 team members in more than 40 countries. The Group reported 2018 global revenues of EUR 13.2 billion.

Learn more about us at

www.capgemini.com

People matter, results count.

About Intel

Intel makes the most amazing experiences of the future possible.

Intel's innovations expand the reach and power of computing in personal devices and enterprise servers, the Cloud, make the Internet of Things smart and connected, and help ensure the security of our digital lives. The work of the company's more than 100,000 employees transforms businesses, propels new discoveries and improves human experiences.

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