

# Gemba Process Innovation

Driving the future of business  
innovation in Europe



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# Foreword

The external pressures shaping business across Europe have never been greater or more varied. As society continues to mature, it brings a host of new challenges and opportunities for industry — forcing them to adapt to thrive.

Examples of issues driving this change include those such as changing consumer buying habits, **rising environmental and ethical awareness and societal issues** such as an ageing population reducing the size of the available labour pool.

In combination, innovation in technology continues to rewrite the possibilities for business. This brings with it both threat and opportunity as disruptors rip-up the traditional rules of commerce, changing the way that manufacturing, supply chains and retail interact.

As organisations explore ways to adapt, looking at the experiences of others can be useful. In Japan, **Gemba Process Innovation is being used to radically review, redesign and reinvent operations using technology to increase efficiencies and free-up creative potential.**

Much like the business philosophy of Kaizen that came before it, Gemba Process Innovation has the opportunity to influence and benefit European businesses.

But rather than small, incremental continuous improvements that were inspired by Kaizen, Gemba Process Innovation takes a more innovative approach. **It combines an in-depth understanding of the organisation and of the latest available technologies to deliver new methods of working.**

**In Europe, Gemba Process Innovation is most obviously suited to manufacturing, logistics and retail industries but it has applications across many industries.** For example in manufacturing, it can accelerate automation with the use of technologies such as robotics. In logistics, it can provide the ability to sort, schedule, track and monitor the condition of goods using Deep Learning and sensor technologies connected via the Internet of Things. In the retail sector, it can be used to adopt AI and camera technology to drive personalised digital marketing, as well as electronic shelf labels to ensure prices remain up to date at the touch of a button and to allow customers to easily find additional product information, such as food ingredients.

I encourage you to read this whitepaper and consider how **Panasonic and Gemba Process Innovation could assist your business prepare for the future.**



**Mr Hiroyuki Nishiuma,**  
Managing Director of Panasonic System  
Communications Company Europe (PSCEU)

# Introducing gemba

Companies are facing massive disruption in their production sites and supply chains triggered by a whole range of emerging trends and technologies. Social trends such as worker shortages and lifestyle changes; environmental trends such as new infectious diseases; and technological advances such as artificial intelligence, intelligent edge devices, and the explosion of e-commerce.

Faced with this rapidly shifting landscape, companies need to optimise the flow of information from things and people at their operational fronts. **The “gemba” is the physical site where these things happen.** This Japanese word literally translates to “the actual place”.

For instance, in supply chain management, the gemba is where things are made, moved, or sold; the site where value is generated and problems must be confronted. **The factory floor, the warehouse, or points-of-sale; these are referred to as the gemba.**

Each has their own unique processes and goals, but also their own peculiar challenges. However, the question on the minds of managers of all these “operational fronts” is the same:

***How to innovate and optimise in the face of rapidly changing conditions and customer needs?***

These developments are not just affecting manufacturers and retailers, but also the logistics industry, which all face pressure to revolutionise their processes. All these **industries know technology can give them greater clarity, simplicity and efficiency. But the pathway to this evolution is not always clear or well-trodden.**

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Through its Gemba Process Innovation offering, Panasonic's goal is to provide that know-how and become a trusted total integrator for clients.

### Why Panasonic?

We have three particular strengths:

Firstly, we have accumulated a wealth of **manufacturing know-how**. Panasonic is continually monitoring, analysing, and improving processes across its hundreds of global production sites. It has amassed **a systematic body of knowledge** that can be effectively adapted to generate operational solutions for diverse clients. Few other companies can boast such systematic and actionable knowledge of the gemba.

2

Secondly, we have **differentiated technology**. From robotics to next generation communications, image processing, and sensing, **we have unrivalled technologies and high-performance hardware** that can be used to "draw up" information to help optimise processes at the ground level. Moreover, we have experience in universal design and user interfaces accumulated from consumer electronics. This gives us a further edge over our rivals in user-intuitive gemba design.

3

Thirdly — and importantly — we have **trust**. Business to business represents 70 per cent of our sales. We have a very strong base of customers in fields as varied as the public sector, transport, retail, manufacturing, avionics and entertainment. **With each of our clients, we commit to an ethos of working closely to first fully understand**, and then be able to improve their operations, from factory floor to delivery. We are proud to not only make highly **reliable products**, but also always being available to **provide support and advice** to clients using our hardware.



These strengths make us a natural choice for those wanting to entrust us for improvements in their gemba.

# Panasonic and the gemba

Over its 100-year history of manufacturing and operating a global enterprise, Panasonic has accumulated a wealth of knowledge about how to innovate processes and how to manage complex logistics — to ship our goods safely to every region of the world.

Thousands of daily incremental adjustments to streamline production processes — meticulously fine-tuning what we do best — are what **drives our company forward**.

This accumulation of gemba knowledge is what generates our constantly evolving, **high-quality products**, and it's what enables us to protect profit margins **and stay competitive in the global economy**.

In recent years, we have accelerated and gained exciting momentum around this **learning by aggressively adopting advancements in technology** — from robotics to sensors, intelligent edge devices and artificial intelligence.

Daily, in **our 325 global production sites**, our technologies are accumulating masses of data about the movement of workers and machines. In this way, our company presides over a **growing body of ever more systematic knowledge** about gemba processes.

## What do we do with this knowledge?

Our know-how has helped to minimise waste, reduce our environmental footprint and improve worker training and safety, whilst all-the-while generating added value in our products for our clients. All of these benefits contribute to lifting our productivity and profitability. We now **offer this gemba knowledge to our clients, alongside our business solutions**.

# Gemba Process Innovation in operation at Panasonic's Saga Factory in Japan

This isn't mass production with a single process fine-tuned over time, this is a super-agile gemba that can produce small lot sizes efficiently and then switch quickly to producing something entirely differently.



The Saga Factory, in southern Japan, is a “showcase” for the company’s manufacturing and supply-chain process solutions. It is a core global production site for Panasonic’s Business to Business operations. It manufactures a broad range of products in varying lot sizes — the majority of which are less than 100 items — and often in infrequent cycles, including payment terminals, security cameras, scanners, sound devices, and cooling equipment, among other things.

Saga is unique not only because of the variety and complexity of its operations, but because of the ceaseless flow of external visitors to its factory floors. Hundreds of companies — not only in the manufacturing sector but also in logistics, distribution, and retail — have toured it. These **businesses all come to learn how production processes are becoming ever more efficient on the cutting-edge factory floors.**

Saga is full of connected and smart technologies that could help clients improve their gemba: head-mount-displays and bone conduction headsets helping workers conduct and inspect work quickly and accurately; “parallel link robots” that workers can use to replicate complex, ultra-precise movements of veteran workers; moveable network cameras on the ceiling and beacons across the floor to record the flow and activities of workers.

All of this know-how is constantly feeding into productivity gains. The data “drawn up” from our own hardware captures the **know-how of the most skilled and veteran workers, while training new ones.** It can be used to optimise personnel number and locations, the layout of factories and flow of production lines.

Roughly 140 companies visited the Saga Factory last year alone. It is an experimental lab and “showroom” for Panasonic’s Business to Business solutions.

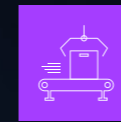


# Gemba Process Innovation

Gemba Process Innovation is our major initiative around B2B solutions that leverages Panasonic's manufacturing know-how and core technologies to innovate customers' processes in production, logistics, and retail.

Panasonic is shifting its focus from **not just** selling **hardware and things**, but to **providing integrated solutions** to our enterprise clients.

## Gemba Process Innovation operates within the context of three areas:



1. **Manufacturing** – where things are made.



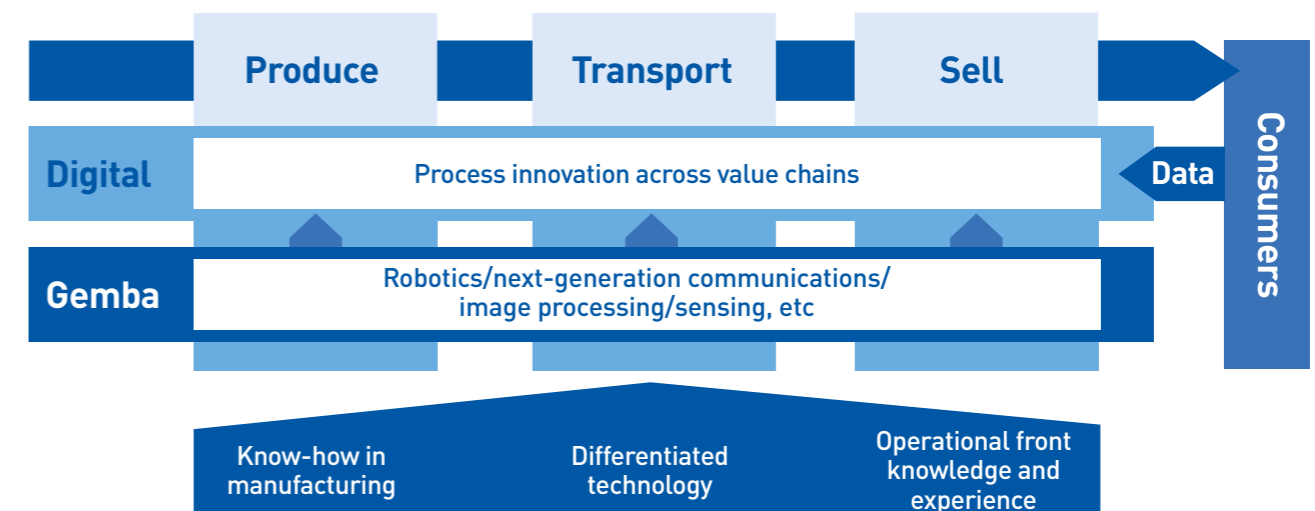
2. **Transportation logistics** — how things get from A to B and this includes the entire logistics supply chain from raw materials getting to factories to finished goods being packaged, labeled, sorted, transported, and distributed.



3. **Retail stores** — where a consumer or an end user interacts with that product in some way.

In each area, we help our clients to connect the “physical gemba” layer with the “digital” layer — integrating to connect individual gembas to the central system to continuously improve processes and outputs.

### Gemba Process Innovation: Overview





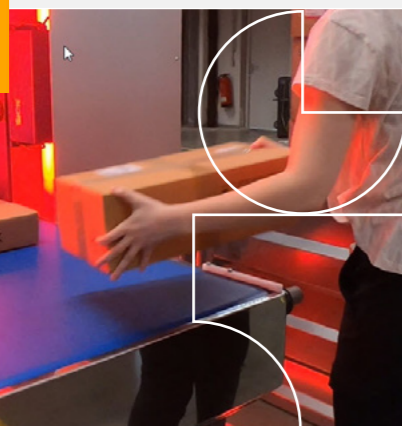
# Gemba Process Innovation in action across industries



## Manufacturing

### Continental Automotive transforms supply chain process for receiving components

Visual Sort Assist can process 300 parcels every 20 minutes and eliminates search time by up to 90%.



Continental Automotive is rolling out a Panasonic supply chain solution to its manufacturing facilities around the world, following successful deployment at its German facility in Regensburg, one of two pioneering plants for Industry 4.0. The Panasonic solution has transformed the receipt of goods at the facility with the system processing **300 parcels in 20 minutes — almost regardless of placement, font size, font, or possible previous damage.**

The Regensburg plant receives 800 parcels per day from its global supply chain. **The aim of the Panasonic project was to shorten the time between the receipt of goods and booking onto the warehouse SAP system,** to make parts available for production more quickly. The deliveries often arrive on mixed pallets, with up to 10 individual goods from different manufacturers on one pallet.

Panasonic delivered a **turnkey system combining object recognition and projection mapping technology.** The solution uses a 7m long conveyor belt to place the packages. The Visual Sort Assist solution scans the barcodes and projects the suppliers' name and priority onto the parcels as they are transported along the belt.

Conception, engineering, installation and commissioning was carried out by Panasonic. It followed a six week analysis of material flow, data streams and manual working processes by a team of experts from Europe and Japan.

Key technologies, such as the image processing software, were tailored to requirements. **Search times have now been eliminated by 40% — and will be reduced to 90% following the next update of the Warehouse Management Software.**



### Teseo Spa, a leader in Italian leather and fabric processing, uses video projection for greater precision and speed when cutting raw materials

Saves up to 7% in raw material waste and reduces cutting time from up to 8 minutes per job to just 30 seconds.

Working with Panasonic, Teseo has incorporated visual projectors into its production process. **The system assists in three areas.**

Connected to the design software application, the projectors are positioned vertically over the material and **visually map the pieces onto the leather.** This allows the operator to see and check the patterns on the leather before cutting, to avoid unnecessary wastage.

Secondly, the projection of light and colour onto the material allows the operator to **clearly identify the different levels of thickness and quality of the leather.**

Lastly, the visual projector systems help the operator to **quickly collect and collate the different pieces after cutting** by shining identifying colours, writing or numbers onto each piece.

The automated operation and its added efficiencies **save the company up to 7% in raw material waste and reduce cutting time from up to 8 minutes per job to just 30 seconds.**



# Gemba Process Innovation in action across industries



## Logistics

### Increasing efficiencies at one of the world's largest logistics companies

This solution has increased staff productivity, increased sorting capacity and efficiency and reduced the need for staff training

How to increase the speed and efficiency of parcel sorting for one of the world's largest logistics companies was the challenge for Panasonic's European Gemba Process Innovation team. Relying on workers to sort packages based on manually reading labels was labour intensive, slow and unreliable.

By interviewing key personnel and analysing inbound and outbound freight types and volumes, **Panasonic was able to present a tailored Visual Sort Assist (VSA) solution.** The Panasonic solution combined scanning technology and projection **to speed up the process of sorting parcels on a conveyor belt at one of the largest global logistics companies.** By using technology to automatically scan the parcel label on the conveyor belt and projecting a large visual delivery number onto the parcel, workers can easily pick up the parcel and place it in the correct delivery area without having to read each delivery address in detail.

Following a three-month proof of concept, with agreed key performance indicators, the solution was given the go ahead for full implementation. Panasonic installed the solution and trained staff. **The result was increased staff productivity, increased sorting capacity and efficiency and reduced need for staff training.**



## Equipping Post NL for increasing parcel delivery demands

Ensures perfect delivery, every time, and offers customers visibility on the status of their shipments.

With online sales across Europe predicted to reach €450.2 billion by 2021, business and consumer buying habits have had a massive impact on the postal and delivery industry, with **a 69% increase in European parcel deliveries forecast by 2021.**

**With this increased workload has come an urgency to find new, more efficient and effective ways of working, as the technology infrastructure and the workforce struggle under the strain.** When Post NL, the largest parcel delivery company in Benelux, wanted to offer customers improved real-time tracking of their deliveries, from sorting centers to delivery address they turned to Panasonic.

After studying Post NL's requirements, **Panasonic recommended a combined software and hardware solution for the business.** Working hand-in-hand with Panasonic, Post NL conducted field trials using new Panasonic **rugged handhelds and ZetesChronos delivery software** to test performance. The electronic proof-of-delivery software helps control and improve collection, delivery and related management processes. It connects drivers, back-office workers and logistics management to provide real-time visibility on goods, vehicles and returnable assets. **This ensures perfect delivery, every time, and offers customers visibility on the status of their shipments.**



# Gemba Process Innovation in action across industries



Retail

## Costcutter<sup>®</sup>

Busy franchise of community store chain, Costcutter, deploys Electronic Shelf Labels and integrated price management software to keep a focus on value for customers.

A busy franchise of the popular Costcutter chain of community stores, with a reputation for keen pricing, has worked with Panasonic and Gemba Process Innovation to help ensure its customers are always aware of the latest price changes.

Every three weeks, up to 300 price changes were having to be made manually to items in store. This sometimes resulted in out of date shelf pricing and promotion information, additional stress and workload on staff and dissatisfied customers.

Panasonic worked with the franchise owners to analyse the issue and identify a technology solution for the business. **Electronic Shelf Labels for each item in the store, across the shelves, fresh products and fridges, integrated to the central price management system enabled prices to be updated automatically.**

The results were startling: a 100% reduction in human error, an 80% time saving on label updates, satisfied customers and an estimated increase in future turnover of up to 10%.



## Leading Swedish Supermarket chain improves customer and internal communications

The solution has had a huge impact on customer satisfaction as well as providing a more cost-effective, flexible, safe and customer-friendly environment.

When a leading Swedish supermarket chain wanted to **improve customer responsiveness and enhance communication**, it turned to Panasonic for a solution. The large shops and long opening hours at its 41 venues meant that at certain times sections of the stores were unattended, which sometimes led to delays in responding to customers.

After analysing the needs of the supermarket chain, its customers and its staff, **Panasonic recommended an integrated communications solution that combined a new PBX telephone system and wireless handsets with customer assistance buttons installed** around the stores.

Each button is pre-installed to connect to a specific phone. As several buttons are placed around the store in different departments, the store manager can control which specific employees are called from each button. **This ensures that the customer speaks to an employee who has the expertise needed to handle the task in question.** Assistance can be given directly over the communications system, increasing efficiency.

The suite of solutions also meets all the chain's needs for telecommunications and in-store employee communications.

The combination of the phones, the call-out system and the buttons had **a huge impact on customer satisfaction** as well as providing a more cost-effective, flexible and safe environment.



## Panasonic security camera and facial recognition solution helps European supermarket chain win Safest Store award.

Safety in our store is important and we strive to give our customers an enjoyable shopping experience.

For one of the largest national supermarket chains, **shoplifting theft was a major issue for the business.**



Working with the business, Panasonic analysed the challenge and recommended **a security camera solution with facial recognition technology to help identify and keep out shoplifters.** Up to 80 security cameras were installed in the stores, with facial recognition technology also used by cameras outside the store. The Panasonic deep learning facial recognition system can identify faces that are ordinarily difficult to recognise with conventional techniques, such as those taken from an angle. It also maintains a **90% accuracy rate when detecting faces that are partially hidden by sunglasses or face masks.**

When people are caught stealing, their **image remains on the database** and the moment that **customer** attempts to re-enter the store, an internal alarm is triggered, allowing managers to take appropriate action. The face server provides a real-time processing capacity of up to 20 cameras per server and **can execute high-speed searches of up to 30,000 registered reference faces.**

As a result of a number of combined security measures, the supermarket chain **won an award for the Safest Store in its country.**

This type of application combining cameras and advanced technologies is a flexible solution suitable for use in many other retail Gemba Process Innovation projects. The technology can be easily adapted, for example, for use in controlling queues for entry into stores, monitoring stock levels on store shelves or ensuring compliance with health regulations, such as the use of face masks.

# Solutions for Optimising Business

We believe in developing technology to make work easier, quicker, better. Challenging convention and breaking down barriers, so businesses can push their ideas to the limit — and achieve their full potential.

**Gemba Process Innovation enables this full business potential to be met.** It starts by understanding your business challenges and working together with you to examine every gemba; every area where core operations are undertaken, to see how we can bring technology solutions to your business to improve effectiveness and efficiencies.

It's why we are restructuring our Panasonic business in every area to bring together gemba-focused teams. **Bringing the best of our business consultants, analysts, designers and engineers together to focus on delivering business enhancing solutions to our customers in the manufacturing, logistics and retail industries.**

We want to extend an invitation to all our customers to allow us help them re-examine their processes at frontline operations to find new and improved ways of working. Let us deploy our business understanding, our knowledge, and our vast technologies and experience of business process innovation to help your business to thrive.

# Gemba Process Innovation