



# RUGGED MOBILE TECH: ENABLING DIGITAL PORT TRANSFORMATION

## ABOUT THIS PAPER

The market expects manufacturers to promote their products as game-changing, industry-shaking must-haves.

Less common is for world authorities and statutory bodies to corroborate such claims by putting them in a global, technological context.

This paper collates industry research supporting the wider need for the digitalization of port operations and puts TOUGHBOOK as a catalyst of that revolution.

Sometimes, it's only when a system or service fails, we realize its vulnerability to external disruptors – and appreciate its importance to us and the wider world. That disruption is often a 'change driver,' a motivator to take tangible steps that protect against future interruption.

Industry research by the [World Bank](#), and the International Association of Ports and Harbors ([IAPH](#)) offer two different perspectives, and two clear conclusions:

**Maritime movement:** "More than four-fifths of global merchandise trade (by volume) is carried by sea." (IAPH)

**Digitization demand:** "The digital revolution is one of the main drivers of change in the port and maritime sector." (World Bank)

With maritime transport carrying **90 percent** of global merchandise trade, the world economy is vulnerable to external disruptors. If COVID-19 was the wake-up call, the Russia-Ukraine situation should release the snooze button.





## PRESSING AHEAD: DIGITAL TRANSFORMATION

The 'shared prosperity' agenda of the 189-member World Bank, and the two hundred global ports within the IAPH, align perfectly in their respective white papers: both prefix their work 'Accelerating Digitalization'.

Both use the disruption of Covid and geopolitical strife to make the case for accelerating progress in technology. It's one barrier fewer to worry about.

"In the short term, impediments will likely drive shortages of essential goods and higher prices; in the medium to longer term, they could result in slower economic growth, lower employment, and higher trade costs." (World Bank)

With ports and harbors managing ninety percent of global container traffic, and sixty percent of maritime trade, profound logistical challenges are behind the "urgent need to ... accelerate the pace of digitalization so port communities offer electronic commerce and data exchange.

"Sharing port and berth-related master data for just-in-time operation of ships [with] suppliers, logistics providers, cargo handling and clearance [will] save energy and improve safety as well as cutting costs and emissions." (IAPH)

## SEA READY?

So, global economists and industry trade bodies agree: maritime trade is vital and digitalization is key to removing one of the barriers to potential disruption.

"The digital revolution [is] one of the main drivers of change in the sector, promoting a high level of integration between devices, agents, and activities ... being on the outside presents a significant disadvantage." Ms. Boutheina Guermazi, Director, Digital Development, The World Bank

The direction of travel is clear. Digitization is the future innovation the sector needs today to prevent avoidable disruption. Processes need people to make them work, and digitalization offers benefits beyond avoiding disruption, and adding efficiencies to dockside admin, too.





## GREATER THAN DATA: PORTS NEED PEOPLE

The IAPH represent more than 160 ports and 120 port-related businesses in eighty-seven countries. They understand more than most the challenges, and potential resolutions, around shipping logistics.

The IAPH 'Call to Action' white paper [Accelerating Digitalization](#), recognizes ports and harbors' obligation to ensure "physical and data interactions occur in a safe, secure, efficient and overall sustainable manner" – and the means to achieve it.

"Emerging technologies [such as artificial intelligence, advanced analytics, internet of things, automation, autonomous systems] allow port and marine employees to work and interact in the safest possible circumstances."

## TOUGHBOOK: FUTURE FUNCTIONALITY, AVAILABLE TODAY

Market intelligence specialists International Data Corporation ([IDC](#)) conducted research at the ports of Rotterdam and Antwerp.

The most technologically advanced in Europe, and therefore at the sharp end of the digital revolution, they are ongoing case studies that illustrate the drivers behind, and benefits of, a digitization project.

The findings are published in their white paper, 'Analysis of Harbor Activities and the Use of Rugged Devices'. It recognizes the port as a diverse, multi-stakeholder ecosystem made up of challenge-specific, and clearly defined, zones.

From sea to quay, port to the hinterland beyond, the research pinpoints where using 'ruggedized tablets' would add value to the IT function within each of these discrete zones.

For example, potential use cases within the immediate dockside environment include "communication with the port; traffic and cargo control, cargo inspection and tracking, and documentation."

Similarly, quayside operations would benefit from suitable hand-held IT in "unloading/loading operations, embedding devices in container-moving machinery, supervision of operations on the ground, oil tanks supervision..."

## SHIPPING: A DRIVER OF CHANGE

The report is keen to recognize the role of port authorities in being 'drivers of change' by deploying common platforms for tracking the status and location of cargo and containers.

IDC identify multiple, immediate, applications for fit-for-purpose digital devices such as managing warehouse inventory.

Their view aligns with the broader, more future-focused World Bank and IAPH perspectives to create a solid business case for ports and harbors, and those working in shipping and logistics.

All three see the hardware as a frontrunner for an inevitable and necessary digital transformation needed to ensure the smooth and reliable continuation of global trade via shipping infrastructures.

"In the medium term, every port needs to ... ensure the full digitalization of all processes related to traffic control and assets management..."

## TOUGHBOOK: THE FOREFRONT OF DIGITAL

The Panasonic TOUGHBOOK range is more than just rugged mobile computing devices. It's where the rubber hits the road for those looking to implement the digitization of ports and harbor administration. Ports and harbors operate continuously to keep the flow of goods moving throughout the supply chain. TOUGHBOOKs are built for difficult port and harbor environmental conditions such as extreme heat, cold, humidity and rain so workers are supported with rugged devices that provide durability, long battery life, reliable connectivity, and low failure rates in the midst of tough conditions.

### RELIABLE IT FOR HARSH ENVIRONMENTS

TOUGHBOOK is the go-anywhere, do anything tech these unique – and testing – environments demand.

- Engineered to work in some of the harshest environments
- Dust and water protection up to IP66
- Drop resistance up to 6 ft
- Wide operating temperature range, as much as -25°F to 145°F
- MIL-STD-810H, evaluated by independent third party

**TOUGHER THAN THE REST:** TOUGHBOOK fully-rugged devices are drop and dust resistant, have glove and rain-enabled, sunlight-readable touchscreens, and can withstand the extremes of port environments.

**FULL-SHIFT POWER:** TOUGHBOOK devices feature long battery life, and available hot-swap technology for increased uptime that productivity is never compromised by power.

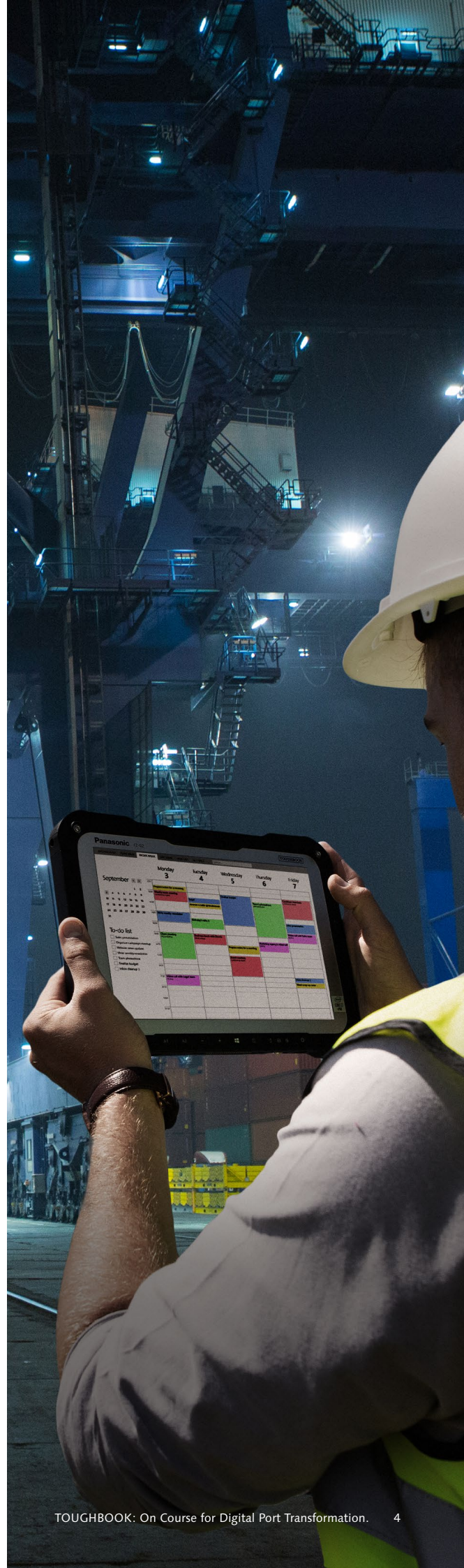
**CONSTANT CONNECTIVITY:** TOUGHBOOK always-on access to cargo information, delivery scheduling and communication is underpinned by a specialist antenna, manufactured, and optimized by Panasonic.

**SEAMLESS INTEGRATION:** TOUGHBOOK provides optional integration with legacy business solutions, such as terminal emulation software, and bespoke inventory management software applications.

**SPECIALIST SUPPORT:** TOUGHBOOK professional services and warranty options support the specific requirements of every customer.

**CUSTOMIZED SOLUTIONS:** TOUGHBOOK devices can be customized to meet specific customer requirements, such as vehicle-mounted solutions.

**ENVIRONMENT-PROOF:** TOUGHBOOK build quality ensures the weather never becomes a problem for your mobile teams.





# TOUGHBOOK FOR PORT AND HARBOR DIGITAL TRANSFORMATION

Panasonic Connect mobile technology helps workers at ports and harbors be more productive and efficient.

**Find out more at:**

TOUGHBOOK.com | toughbook@us.panasonic.com  
1.888.245.6344

**"MARITIME TRANSPORT REMAINS THE BACKBONE OF GLOBALIZED TRADE AND THE MANUFACTURING SUPPLY CHAIN."**

IAPH

**"THE DIGITAL REVOLUTION HAS EMERGED ... AS ONE OF THE MAIN DRIVERS OF CHANGE IN THE PORT AND MARITIME SECTOR"**

WORLD BANK



**References:**

\* Captive International 2020.

1. The World Bank, with input from International Association of Ports and Harbors (IAPH) and World Ports Sustainability Program (WPSP) published a digital white paper, **Accelerating Digitalization: Critical Actions to Strengthen the Resilience of the Maritime Supply Chain**.
2. Analysis of Harbor Activities and the Use of Rugged Devices (IDC)
3. **Accelerating Digitalization of Maritime Trade and Logistics: A Call to Action** (IAPH)

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