

Making the Wearables Business-Case.

Key success metrics, research
& ROI for innovation leaders.

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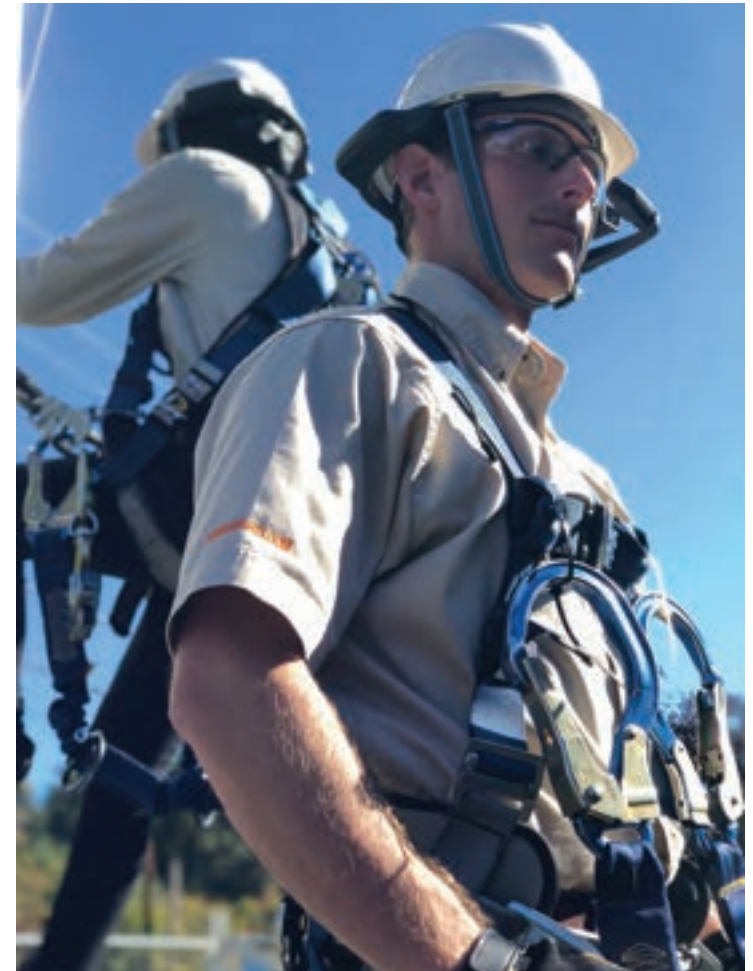
Making the Wearables Business-Case.

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When you are innovating at the bleeding-edge of technology, one of the greatest challenges for an innovator in the enterprise is to effectively convey the value of wearable AR/VR to other stakeholders in the organisation, and bring them on the journey. The perceived challenges of User Adoption, software redundancy, back-end incompatibility, cybersecurity, scalability and general organisational friction that evolving to wearable, connected worker technology would need to overcome, can seem like insurmountable roadblocks.

'... innovators like you who understand the value, foresee the evolutionary inevitability and have the ambition and bravery to make it happen.'

But in 2021, thankfully(!), the real data & research exists, as does the qualitative + quantitative evidence and field expertise, to support innovators like you who understand the value, foresee the evolutionary inevitability and have the ambition and bravery to make it happen. But someone will likely need to write a business case at some point. In this short document, we hope to provide you with the right questions and real metrics for that business case, to appease even the most conservative corporate-naysayer and change-blocker.



The first stop for innovators is ensuring you understand your baseline:

Un-connected workers intrinsically provide low-level data, so it is hard to know what your workers are dealing-with, at the coal-face, in the field and at the edge-of-the-edge. Here are some key points of discovery, and best-practice questions to ask initially:



**Do you
know your
un-connected
worker baseline?**

1. What is the cost of down-time, and what is the major cause of down-time in your operations?
2. What is the standard response-time to a break-fix incident?
3. How are workers at the edge able to communicate with each other (if at all)?
4. How standardised are your processes? Or would different workers do the same maintenance or inspection task different ways?
5. How many workers are near retiring age, and how well are you acquiring and cataloguing their special-knowledge, and translating it into training?
6. How do your workers feel about hand-held mobile devices (eg do they leave them in the ute and enter handwritten data when they return from the site)?
7. What percentage of time do workers spend manually downloading images and formatting + designing reports?
8. Is your company looking at Visual AI and addressing the need to train machine learning on visual imagery?

Collect & Collate.

A lot of ICT teams and C-Suite managers are shocked at the responses they receive and insights they gain, when they learn the reality of the methods by which work gets done at the very hot, dusty, edge-of-the-edge.

It is not unusual for a worker to drive for an hour or more to retrieve a maintenance manual, or for a task on heavy equipment to be done many different ways by different engineers (don't tell your insurer!).

Once you have collected and collated the baseline of the way things currently get done, which will no doubt be a compelling business case in-and-of-itself, it's time to deep-dive into the proven value that wearables and properly-integrated software solutions provide.

Wearable technology is the convergence of Operational Technology (OT) + Information Technology (IT). There is a human-machine interface hardware component, as well as a software component that is properly customised for that new interface (and is much more than just adjusting the screen-ratio and font-size).



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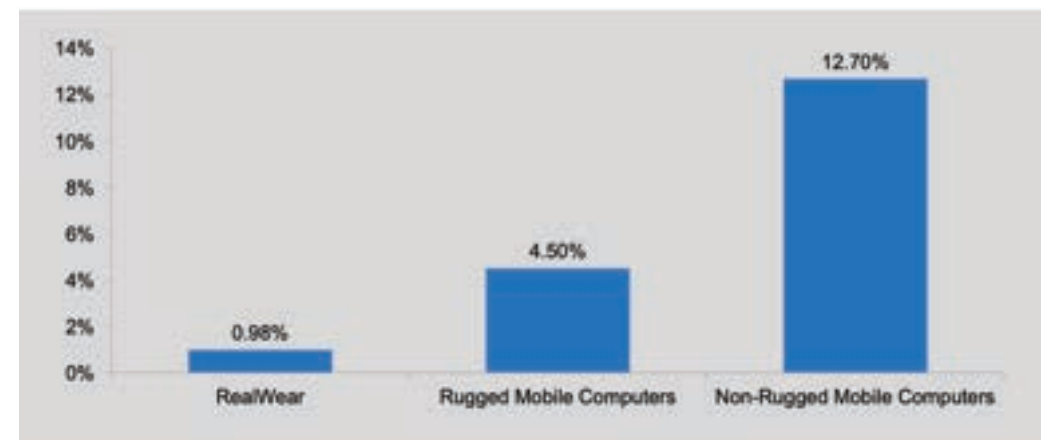
Making the Business-Case.

For anyone making a business-case, the first stop is to address the hardware, vs the incumbent digital devices used in the field: phones and tablets. VDC Research recently conducted a comprehensive study, comparing head-mounted wearables (RealWear HMT-1) with ruggedised mobile (eg Panasonic Toughbook, Zebra, CAT) with non-ruggedised mobile (eg iPhone, iPad). The results were quite remarkable:

Exhibit 5: Five Year TCO



Exhibit 3: Average Annual Failure Rate by Mobile Device Type Supporting Frontline Mobile Computing Solutions (Source: VDC Research, 2020 TCO Survey; n=250 - Average Annual failure, Year One; RealWear failure rates provided by RealWear Operations)



Full report available from VDC Research: <https://www.vdcresearch.com/>

While the economic benefits of shifting from traditional mobility to wearables clearly make sense, there are other important considerations for this new computer-machine interface.

SAFETY:

One of the most obvious and key advantages of moving to a wearable interface is the availability of both of a worker's hands to be able to physically manage their own safety (holding handrails, supporting weight when off-centre etc) and also being able to hold and operate tools and equipment in the field, while still being able to collaborate on a call or enter data into a form.

Just watching a worker having to work with a hand-held digital device while picking up and putting down tools, taking off and putting on gloves for typing, staying upright and be aware of peripheral dangers is an impressive and unnecessary juggling act.

But there are other important safety considerations as well, such as cognitive load.

In a combined study between Purdue, George Mason and Nebraska Universities in the US, they showed that increased Working Memory cognitive load will dramatically increase the risk of accidents on a construction site.



The Phonological Loop is a precursor of working memory that allows us to receive and store information with a very high level of accuracy for up to 3 seconds only. If a piece of data needs to be memorised for longer than that time, it adds to cognitive load and is more likely to be incorrect.

Using a wearable device and speech-to-text Workflow Software like Onsight Flow from Librestream, data can be transposed/digitised in less than 3 seconds, increasing accuracy and significantly decreasing the risk of accidents caused by cognitive overload.

PRODUCTIVITY:

When data can be transposed quickly, efficiently and accurately, the time to do those tasks lessens extensively. This can be applied to autonomous data capture (per workflows) as well as collaborative data-capture (on a Remote Expert call, for example).

Simply by quite literally sharing a worker's Point-of-View (POV), as they explain an issue and use their finger to point to areas of interest, time-to-mutual-understanding and associated frustration can be greatly reduced, break-fix issues can be resolved much faster and productivity increased.

To assist with your business case, here are some rarely-compiled key metrics and results from industry leaders who are using wearables and Remote Expert and/or Workflow tools, plus top-tier consultancies that are predicting major impacts:



+200%

PETROFAC

By using wearables and speech powered workflow software, Petrofac increased maintenance productivity (tasks-per-day) on offshore oil platforms by more than 200%.

75%

TEXMARK

Texmark chemicals reduced time spent on standard railcar inspections and photographic capture by 75%.

+41%

AIRBUS HELICOPTERS

By using wearables and speech powered workflow software, Airbus Helicopters increased engineer productivity by more than 41% while also increasing the accuracy of mechanical measurements to 100%.

80%

A MAJOR OEM

A major OEM in the printing industry in the US reduced time-to-mutual-understanding by 80% and decreased down-time on multi-million-dollar equipment by more than 85% by Remote Expert collaborating with customers through wearables.

+30%

BOEING

Boeing increased productivity by 30% while reducing errors by 96%, using head-mounted wearables in manufacturing.

THE FACTS:

92%

According to leading Field Service ISV, Librestream Technologies, of the tens of thousands of Remote Expert calls made from the field everyday on their software, around the world, more than 92% are at bandwidth levels that won't support off-the-shelf meeting-room solutions such as Cisco Webex and Microsoft Teams, and require more specialised solutions.

>50%

In the Future of Field Service, Gartner predicts, over 50% of field service management deployments will include mobile augmented reality collaboration and knowledge sharing tools by 2025.



>50%

A major truck manufacturer's dealership network in Europe increased their time-to-mutual understanding on service calls by more than 50% and accelerated resolution time of mechanical service issues by 20%.



75%

Global construction firm MACE, reduced travel costs by 75% by deploying wearables and Remote Expert software and, after POC moved to a deployment of 150 head-mounted wearables.



+30%

Research by Field Service News outlined that while nearly 3/4 of field service companies had introduced remote service capabilities, only 1/5 of these were using sophisticated tools such as AR and head-mounted computers to do so.



43%

According to Gartner, 43% of industrial companies plan to update outdated systems but workers are still using 'pen and paper' to record their data.



SOME KEY INSIGHTS:

In a report by Worldwide Business Research, 100 global key decision makers were interviewed on the implementation of AR in their businesses. 48% represented organizations making between \$1 billion and \$10 billion in annual revenue. Another 34% represented organizations making more than \$10 billion per year, and all made at least \$500M.



**Are You Ready
To Make Your Case?**

54%

of organizations will increase their spending on AR in the next 12 months. About 82% of those will do so by 20% or more.

61%

of executive leaders believe AR is an important or critical piece of their strategy.

59%

of respondents say AR helps improve contactor support and new technician onboarding, while 56% say it helps in reducing the need to travel for service.

45%

of respondents say AR is a strong selling point in third-party contractor negotiations.

54%

of respondents say the importance of AR will be somewhat or greatly increased at their organizations in the next 12 months.

28%


of respondents believe both machine learning and digital work instructions are “very important” to their current service organizations.

81%

of respondents describe IoT data at the point of service (eg the edge) as important, followed by machine learning at 79% and remote assistance at 71%.

Measurable outcomes, a robust business-case.

Now it depends on your industry per what the bottom-line of down-time costs, what travel expenses cost, what an additional worker costs. You may be looking-at losing \$250 a minute for a broken fat-pump in a dairy plant, or \$10,000 a minute if a bucket wheel is down on a mine-site. But when you extrapolate-out the proven benefits and metrics of Wearables and Wearable-centric software per the aforementioned enterprise results, against the real cost and status quo of what your company does-and-deals-with today, it makes for a compelling argument. For any company looking for bottom-line impacts while increasing the safety and user-experience of Digital Transformation for workers, wearables are a compelling option.



Please note that if you require further references and case studies on any of the data we have provided, please get in-touch and we would be happy to provide them.

If the business case is harder for you to prove-out because you require very specific use-case identification within your organisation and don't have sufficient existing tracking and data on worker performance, don't worry – because you are *definitely not alone*. If you are in this situation and need more data before you make your case and secure investment, Virtual Method offers turn-key POC's with all wearables, software and training/onboarding provided. In addition, we conduct a workshop, audits and workflows-as-a-service so you can accurately gauge time-and-motion productivity as well as the safety-associated benefits against your incumbent methods and systems. The outcomes will be measurable, robust and the business-case will be worthy of the due consideration of any C-Suite stakeholders in your organisation.

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Contact us at Enquiries@virtualmethod.com.au