


# TABLET TROUBLES



A STUDY OF TABLET  
USE IN BRITISH BUSINESS

# FOREWORD

The fact that tablets have failed for almost half of all workers in the past two years and those experiencing problems have had an average of three issues during this period and had to wait two weeks for a repair or replacement, says that business and their employees are currently paying too high a price for tablet deployment. The benefits of tablets in the workplace are clear; at their best, the ease of use and versatility are undoubtedly improving workplace productivity but this latest research suggests to me that many organisations are making mistakes with their tablet strategy. It is surely no coincidence that many of the failures we are seeing are as a result of consumer tablets being used for work purposes.

With the most common forms of failure being exposure to cold and heat, spillages and knocks and drops, true consideration of the work environment that the tablet will be used in and its design and suitability for the task must be considered more before purchase.

Today there are a plethora of tablets to choose from, ranging from the well-known consumer devices to the super rugged or specialised devices designed specifically for industry sectors. Whether it is a need for outside viewable touchscreens or hot swappable, long battery life or the ability to stand up to extreme temperatures or knocks and drops, there is a tablet designed for that work environment. They may initially cost more than a consumer tablet but the total cost of ownership and productivity uplifts delivered by specialist devices are likely to make the total cost of ownership far more attractive.

I hope you find this research useful and our guide to choosing a tablet helpful in making your buying decisions and avoiding future tablet troubles.

**Jan Kaempfer, Marketing Director of Panasonic Computer Product Solutions**

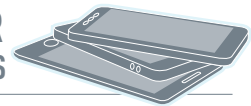
# EXECUTIVE SUMMARY

British businesses are paying a high price for the introduction of tablets in the workplace with 47% of users experiencing tablet failures in the past two years. Those with tablet troubles have experienced an average of three failures during this period and an average repair or replacement time of two weeks. The tablet troubles were identified in one of the first studies to examine the reliability of tablets used for British business.

**47%** TABLET USERS EXPERIENCE FAILURES IN 2 YEARS



**AVERAGE OF 3 FAILURES** IN PAST 24 MONTHS FOR THOSE WITH TABLET TROUBLES



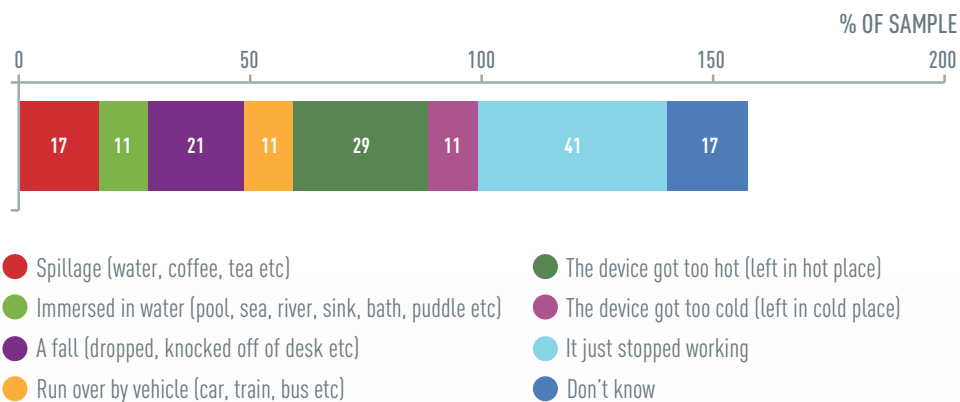
**AVERAGE REPAIR OR REPLACEMENT TIME 2 WEEKS**

## CAUSE OF PROBLEMS

The most common cause of failures was extreme temperatures, with 29% of problem tablets being left in a hot place and 11% out in the cold, such as in a car overnight. Aside from temperature-related issues, the most common accident was a fall, being dropped or knocked off a desk (21%). This was followed by spillages of water, coffee, tea and soft drinks (17%) and even total immersion in water (pool, sea, river, sink, bath, puddle) at 11%. More than 1 in 10 (11%) even reported seeing their tablet run over by a vehicle.

### Cause of Problems

Which of the following do you think was the cause of the problems?

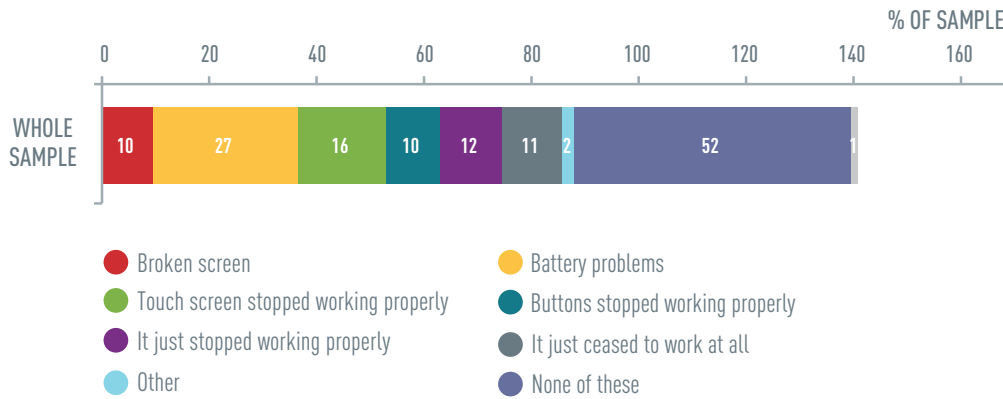



## TABLET FAILURES

The most common cause of the failures is battery problems (27%), touchscreen issues (16%) and another 10% suffering screen breakages or button failure.


### Frequency of tablet failure?

Which of the following problems have you encountered with tablets you have used for work over the last 2 years?




**27%** 

EXPERIENCE BATTERY PROBLEMS

**16%** 

EXPERIENCE TOUCH-SCREEN ISSUES

**10%** 

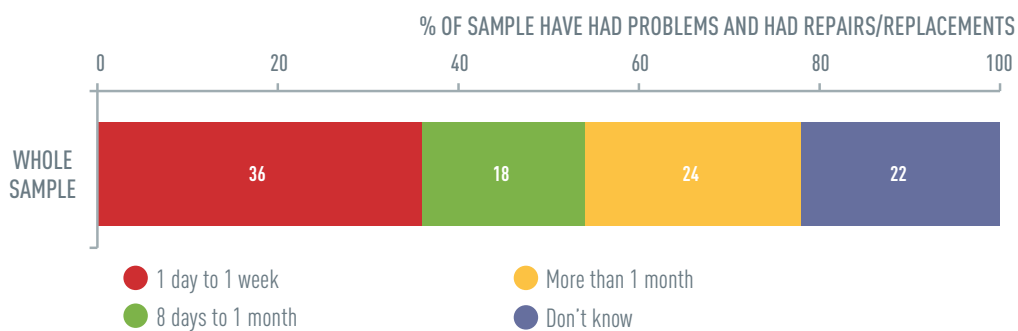
SUFFER SCREEN BREAKAGES

## TABLET DOWNTIME

The problems were compounded by the 14-day average length of repair or replacement time for the tablets.

### Tablet downtime

When you had problems with the tablet you use for work purposes, in total, how long were you without the use of a tablet whilst it was being repaired/replaced?

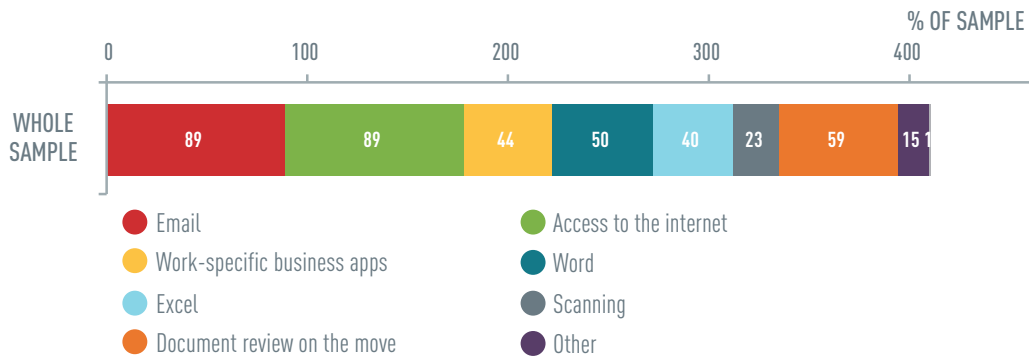


## WORK TASKS PERFORMED ON TABLETS

Email and access to the internet were the two most common work-related tasks that employees use tablets for (both 89%). Also popular was document review on the move (59%) and using Word (50%) and Excel (40%). However, 44% of employees also use a tablet to access work-specific business apps.

### Work related tasks

Which of the following work-related tasks do you use the tablet for?

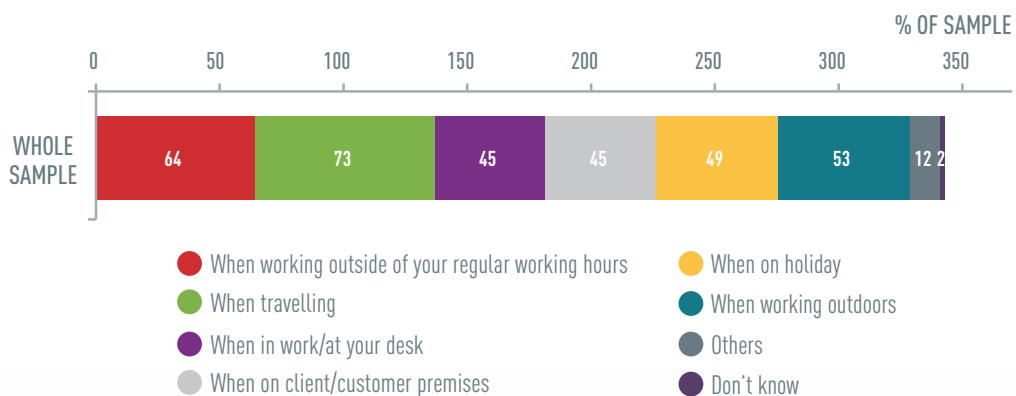


## WHEN TABLET IS USED

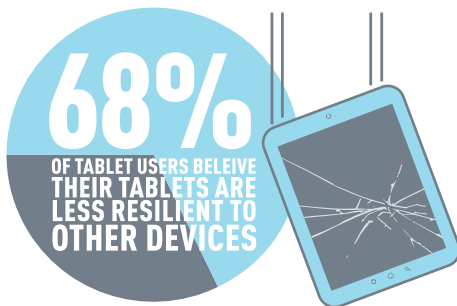
The tablet is most commonly used for work-related tasks when employees are travelling (73%). However, 64% use it when they work outside of their regular hours and 49% use it to work when on holiday. 53% of respondents said that they use the tablet to work outdoors, with 45% using it inside or at their desk and similarly, 45% when on client or customer premises.

### Situations where a tablet is used for work

In which of the following scenarios do you use the tablet for work-related tasks?



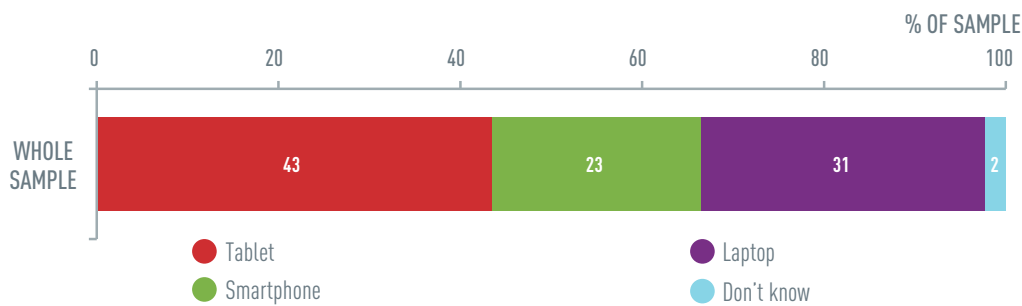
**MORE EFFICIENT BUT LESS RESILIENT**



Overall, most employees think the tablet makes them more efficient when performing work-related tasks on the move (43%) but 68% of tablet users said they believed their tablet was less resilient to failure than the devices they used before, such as a PC, laptop or smartphone.

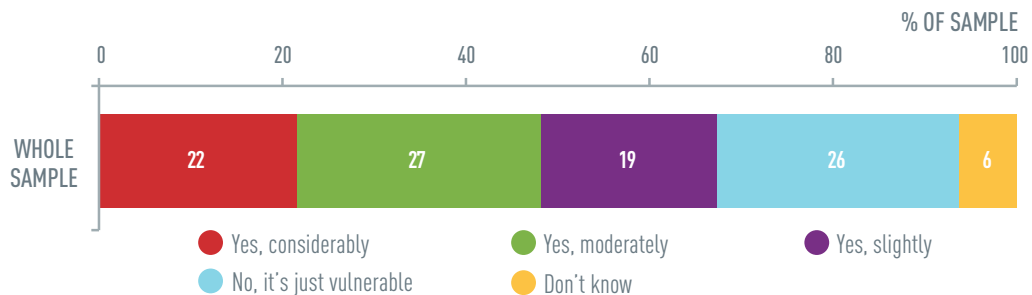
**Most Efficient Device**

Overall, which of the following devices makes you more efficient when performing work-related tasks on the move?



**Tablets less resilient?**

Do you find the tablet you currently use less resilient to failure in terms of it being prone to going wrong, breaking or failing in some way than the devices you used before, like a PC, laptop or smart phone?



The research was based on responses from 500 British workers who use a tablet for work. The study was undertaken by Dynamic Markets Ltd and commissioned by Panasonic.



# BUYER'S GUIDE: THE ESSENTIAL INGREDIENTS FOR A BUSINESS TABLET



## i. Hardware Design

The first major consideration should be the device design. Has the device been purpose-built for use in a specific work environment? In a business environment, the tablet is much more likely to suffer daily knocks and falls.



## ii. Ruggedized for purpose?

The ideal business device should be ruggedized for its purpose. This could mean magnesium alloy casing, inside and out, and anti-scratch and thermally reflective coatings to ensure the device can operate in a range of extreme weather conditions.

Some purpose-designed, rugged mobile computing devices also come with a foam packing system that provides flexible seals in the devices to expand and contract as required, to protect against dust and water. To ensure your device has the correct protection, buyers should look for tablets with an International Protection Rating (IP), which ensures a device has been tested to meet specific standards.

In addition, buyers should consider the range of extreme temperatures that the device needs to work in. A tablet left in the car, for example, can quickly reach very high or low temperatures. Purpose-designed rugged devices can be built to operate in temperatures ranging from -29°C to +60°C by using a Hard Disk Drive or Solid State Drive heating system and Hybrid Cooling System combining a passive and active cooling process to maintain a suitable operating temperature however extreme the weather.

Consumer tablet devices are not typically built to operate in this wide range of temperatures. Some popular consumer devices have been widely reported with problems working at temperatures above 35°C. These issues typically lead to the device automatically shutting down while it cools, leaving the user without access to the device for periods of 20 minutes plus. This can prove a considerable inconvenience for someone like a mobile salesperson about to give a customer presentation or a healthcare worker visiting a patient at home.





### iii. Ergonomically designed for the mobile worker?

In addition to the size, weight and shape of the tablet, business buyers should consider how the mobile workers will use the tablet. Field workers such as engineers often have to work in restricted spaces; as a result it is often useful for the tablets to have features such as a holding strap to allow the worker to hold the device in one hand whilst entering information or a shoulder strap to ease transportation. Other considerations, in the health care environment in particular, might be how easy the device is to keep clean. For example, some healthcare tablets have been designed so that they can be regularly wiped down with disinfectant to protect against the spread of viruses.



### iv. Display designed for easy use on the move?

The display screen is one of the most important aspects of the tablet to consider. Outdoor screen visibility is a must for mobile workers on the move. As well as being rugged and protected against scratching, the display technology should be carefully considered:



#### a) Resistive Touchscreen

Resistive touchscreen panels are generally more affordable and work well with almost every stylus-like object. Resistive touchscreen panels are not affected by outside elements such as dust or water; can be controlled even with gloves and therefore are the ideal companion for any rugged PC. The resistive touchscreen panel is coated with a thin metallic electrically conductive and resistive layer that causes a change in the electrical current, which is registered as a touch event and sent to the controller for processing.



#### b) Capacitive Touchscreen

Capacitive touchscreen panels must be touched with a finger, unlike resistive and surface wave panels that can use fingers and stylus. Capacitive touchscreens are affected by outside elements (like rain on the screen) and have high visibility and screen clarity. A capacitive touchscreen panel is coated with a material that stores electrical charges. When the panel is touched, a small amount of charge is drawn to the point of contact. Circuits located at each corner of the panel measure the charge and send the information to the controller for processing.



#### c) Digitizer Touchscreen

The key benefit of a digitizer touchscreen is the accuracy of the digitizer pen, which means that detailed drawings and signatures are possible. However, because the screen requires a special digitizer pen the touchscreen cannot be controlled with fingers or hands. Digitizer touchscreens make use of electromagnetic induction technology, where the horizontal and vertical wires of the screen operate as both transmitting and receiving coils. By using electromagnetic signals, the tablet is able to sense the stylus position without the stylus having to touch the surface, and powering the pen with a signal from the device means the stylus doesn't need batteries.



#### d) Dual Touch

Dual touch is a combination between capacitive or resistive touchscreen with Digitizer technology. It enables the user to use the GUI with fingers as well as with a digitizer pen. The key benefit of this combination is the intuitive handling via finger and the accuracy (signature capture, hand writing recognition) of the pen.





**e) Multi Touch**

Multi Touch is a method of input on a touch screen that allows two or more fingers to be used on the screen at one time. Multi touch allows pinching and stretching gestures on the screen to control zooming. A multi touch display is also pressure and gestures sensitive, which allows predefined motions to be recognised as commands to perform an action, such as rotate the object on the z-axis.

**f) Conclusion**

The choice of display screen technology and materials is essential to the ease of use and productivity of the user in a business environment. Capacitive, multi touch and resistive devices all have their role to play depending on whether the user works predominantly outside or inside, is required to wear protective gloves or has issues such as signatures to capture.

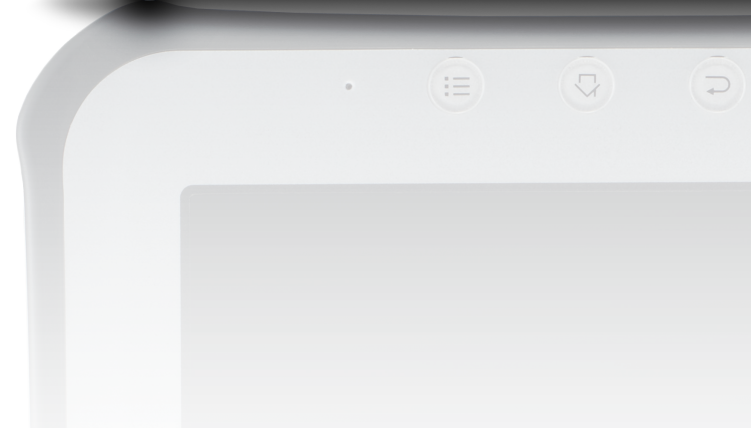
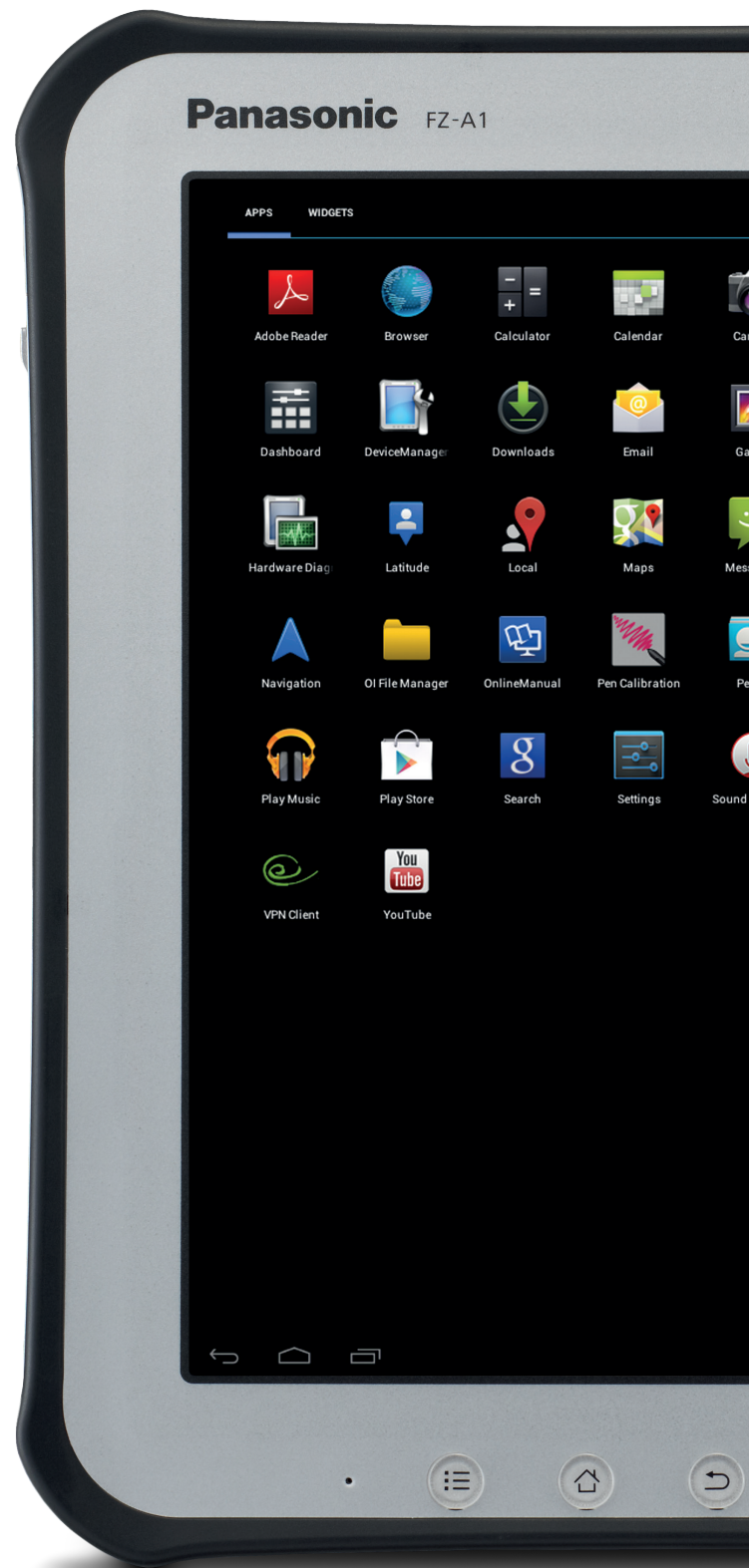
Many consumer devices are solely capacitive devices, which can be restrictive in their use. Business buyers should look for tablets that have dual touch that combine the best of both the capacitive technology and digitizer technology. They also designed for mainly inside use, creating difficult glare and reading issues in direct sunlight, often not helped by their ability to attract fingerprint smears. Finally, the fragility of the screen display should be considered. Consumer tablets are not designed to take the everyday knocks and scratches suffered typically by business used devices.

Business buyers should look for a tablet device that has screen display technology options, using materials that are toughened and designed for everyday work use with a strong display protection layer to prevent damage and extend the practical life of the device.



**v. Data Transfer Requirements**

When mobile workers are out in the field, it is essential that they are able to transfer data from their tablet device to their central back-office systems. Popular consumer devices have been criticised for their poor wireless performance in certain environments or when held in specific positions. This relates to the design and position of the wireless antenna embedded into the casing of the device. Business buyers should look for a range of data transfer capabilities in their tablet devices including 3G and 4G,



802.11a/b/g/n Wi-Fi and Bluetooth® 4.0 Class 1 connectivity, as well as a thorough approach by the manufacturer to ensuring business users have access to different data transfer options while on the move.



**vi. Mobile Computing Accessories**

Although consumer tablets have access to a wide range of software applications, business tablets users often require device accessories such as bar code readers, cameras and common interfaces such as USB and Serial ports and SD Cards to help them with their role. Many consumer tablet devices do not have these options and business buyers should be careful to select a device which will meet their needs both for today and in the future.



**vii. Evolution of Hot Swap battery systems**

Most consumer tablets use a single battery design, which is unable to support busy mobile workers who spend the day out in the field and need their tablet to have hot swap batteries to continue working as long as they need them. These devices typically use Li-polymer battery technology, as opposed to the Lithium-ion battery technology designed for extended business use.

When compared to the Lithium-ion battery, Li-polymer batteries have a greater lifecycle degradation rate and are more sensitive to electrical and thermal affects. Use at temperatures in excess of 35°C can cause these batteries to overcharge or discharge too quickly and temperatures below 0°C can damage or destroy the batteries.

In addition, these consumer tablet batteries are usually difficult to replace when they begin to fail because they are typically encased in the closed unit. This means that the whole unit has to be sent for servicing – leaving the user without a device or a new replacement device with all the additional worked required from IT administrators to set-up a new user profile as required.

Business buyers should consider devices with hot-swap battery systems that use the tougher Lithium-ion battery technology that can provide up to 10 and beyond hours of operation and allows users to swap batteries while the unit is running.



**viii. Removable Hard Disk/Solid State Drive (HDD/SSD) means secure data**

Popular consumer-designed tablets are made with a single user in mind and the storage is flash RAM fixed to the device, making data stored vulnerable to theft or corruption. Having a tablet with a Hard Disk/Solid State Drive (HDD/SSD) that can be easily removed is a requirement business devices can offer. This capability ensures data is protected against loss, corruption or theft. Also in multi-shift work environment, users can share devices but maintain their own profile and data by swapping out the HDD/SSD. Finally, if a unit is damaged, the user can continue working on another device by simply swapping their HDD/SSD across, while their unit undergoes repairs.



**ix. Essential Security features**

In a business tablet standard security features such as fingerprint, smartcard and RFID authentication options are often required to protect access to secure data. In many popular consumer models these security features are absent or inappropriate for business use.





#### x. Standard Software and Operating Systems

Business tablet users should look for open software and standard operating systems when specifying their devices. Many popular consumer devices operate closed systems for purchasing software and do not have the feature-rich business software professional users are used to.

Business buyers should also check that the tablet device supports Flash and Javascript to ensure that web content can be displayed on the device and that multiple user profiles and user groups can be set-up on the device. Tablets with a Windows operating system are the most established business devices because they can be quite simply plugged into most existing business infrastructures, as opposed to an iOS platform (or even Android) that needs specific management software to control and manage the devices.



#### xi. Essential Business Service Support

Finally, business buyers should pay careful consideration to the service support they will receive from the tablet supplier. How long are the standard warranties, will you receive a replacement device while repairs are ongoing and what level of support does your manufacturer offer? These are all essential questions for the business buyer when considering the total cost of ownership of their tablet devices.

A tablet designed for business use will have a life expectancy of five years, while consumer tablets and netbooks are often designed to last for just two years. This is an important consideration when calculating the total cost of ownership of the device.

As a result, consumer tablets typically have just a standard one year product warranty that can be extended to two years. In the business world, buyers should expect a three year product warranty that can be enhanced, along with the opportunity to purchase accidental damage cover and other additional services, such as assistance with set-up and deployment. And when the devices go wrong and requires repair, close attention should be paid to the manufacturers' standard operating practices. Consumer tablet manufacturers often only have a two-tier repair service of small or total repair; meaning repairs can be expensive for even the smallest of requirements. In addition, most consumer manufacturers provide a swap-out service, which means that a new or refurbished replacement device is supplied. This can cause headaches for the IT administration team as new profiles, applications and data refreshes have to be made each time a device is repaired. In addition, there is also the security concern of sensitive data being sent to a third party along with the device for repair.

In the corporate world, these levels of service are not usually practical or acceptable. Business buyers should look for repairs according to the cost of man-hours and materials with a 96 hour repair commitment and a 5 year spare parts warranty.



#### 4. Summary

When considering the right tablet for their business, corporate buyers must consider the increased ruggedness, flexibility, security and usage needs their organisation will demand from their tablet. When comparing popular consumer tablets against the purpose-designed corporate tablets, it is clear that there are fundamental differences in the designs. Key elements to consider are:

- Hardware design
- Ruggedized for business use
- Ergonomically designed for users
- Display screen technology
- Data transfer requirements
- Mobile computing accessories
- Hot swap battery systems
- Removable Hard Disk Drive
- Authentication and security features
- Standard software and operating systems
- Business-level service and support
- Overall total cost of ownership

#### About Panasonic System Communications Company Europe (PSCEU)

PSCEU is the European branch of Panasonic Systems Communications Company, the global B2B division of Panasonic. PSCEU's goal is to improve the working lives of business professionals and help their organization's efficiency and performance. We help organizations capture, compute and communicate all sorts of information: image, voice, and textual data. Products include PBX telephone switches, document printers, professional cameras, projectors, large visual displays and rugged mobile PCs. With around 500 staff, engineering design expertise, global project management capability and a large European partner network, PSCEU offers unrivalled capability in its markets.

#### The new PSCEU is made up of four business divisions:

- Communication Solutions including professional scanners, multifunctional printers, telephony systems and HD video conferencing systems.
- Visual System Solutions including projectors, interactive whiteboards, presentation aids and displays. Panasonic is the European market leader in projectors with 28% revenue share.
- Professional Camera Solutions including professional audio visual, security and industrial medical vision (IMV) technology. Panasonic is one of the top two professional camera vendors in Europe.
- Computer Product Solutions including the Toughbook range of rugged notebooks, Toughpad business tablets and electronic point of sales (EPOS) systems. Panasonic Toughbook had 63.3% unit share of the European rugged and durable notebook market and a 29.2% unit share of the rugged business tablet market in 2012 (VDC, March 2013).

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