# IMPROVE
# BUSINESS PRODUCTIVITY THROUGH
# ENTERPRISE MOBILE APPS IN PLM

# Abstract

*This whitepaper introduces the concept of Mobility in PLM and how the prominence of mobiles and tabletsin our lives can be leveraged to improve productivity in the workplace. Some of the common approaches in Mobile Architectures have been discussed to give the reader a brief understanding on the right approach to take. The method of distribution of the Mobile Applications for PLM is also important and should synchronize with the overall technology strategy of the organization. To sum it up, the paper raises ideas on possible courses that PLM on Mobile would take in the near future.*

PLM is a strategic business approach that enables technology to integrate people, data, processes, and business systems and provide a product information backbone for companies and their extended enterprise. Amidst high competition and increasing customer demands, businesses in the Manufacturing industry have alreadyadopted PLM or are in the process of adoption to stay ahead of the innovation curve.

Today, using mobile devices only to access your business e-mail is not enough. Often, employees on the move have limited scope of collaborating with their colleagues and vendors, resulting in low responsiveness to business activities. While PLM is

the "single version of the truth", information gaps still remain between the product designers, factory and consumers. Many decisions and processes still happen outside the PLM system, and that information can be lost, be delayed or inaccurate or simply not entered into the PLM system at all.This hampers operational efficiency and business continuity. Despite of the Smartphone boom, most enterprise apps are not customized for the wide array of mobile devices available in the market. Executives on the move find it difficult to access vital business information quickly.

# Decision-making and innovation on hold when employees are mobile

Enterprise Software has a low adoption rate as they restrict users to office desktops causing inflexibility for employees. Collaboration between globally dispersed product teams is essential to bring out better products, faster to market. Optimal product lifecycle management cannot be accomplished by a single silver-bullet solution, but rather through the strategic integration of processes, data, people and especially technology.

Most business users are well connected via gadgets like smart phones and tablets at all times, as compared to a PC or laptop. Enabling PLM processes with mobility can vastly improve communication, efficiency and data accuracy – in the end, leading to better decision-making. Mobile applications give employees more flexibility in accessing corporate data and applications when traveling or working remotely. Mobility also increases productivity because employees can communicate with their colleagues more frequently and can quickly respond to issues that arise in real time.

# Mobile Architecture and New Technology Adoption in PLM

Traditionally adoption of PLM in manufacturing companies has been lagging by almost 3 years as compared to other enterprise applications. Since, mobility has been explored by other technologies; does it mean that the time has come for PLM on Mobile? There is a lot of work going on in this area and there is still a lot to be done before a homogenous environment is available in the market, which will eventually bring the manufacturing industry to get new immersive technologies like mobility in its fold.

In terms of Architecture for building PLM mobile applications, there are three different approaches that we can take. The first approach is based on Mobile/tablet's browsers, second is on development of Native apps on each of the devices and third is a Hybrid approach.

- Web/HTML5 Apps use standard web technologies—typically HTML5, JavaScript and CSS. This write-once-run-anywhere approach to mobile development creates cross-platform mobile applications that work on multiple devices. While developers can create sophisticated apps with HTML5 and JavaScript alone, some vital limitations remain at the time of this writing, specifically session management, secure offline storage, and access to native device functionality (camera, calendar, geolocation, etc.)
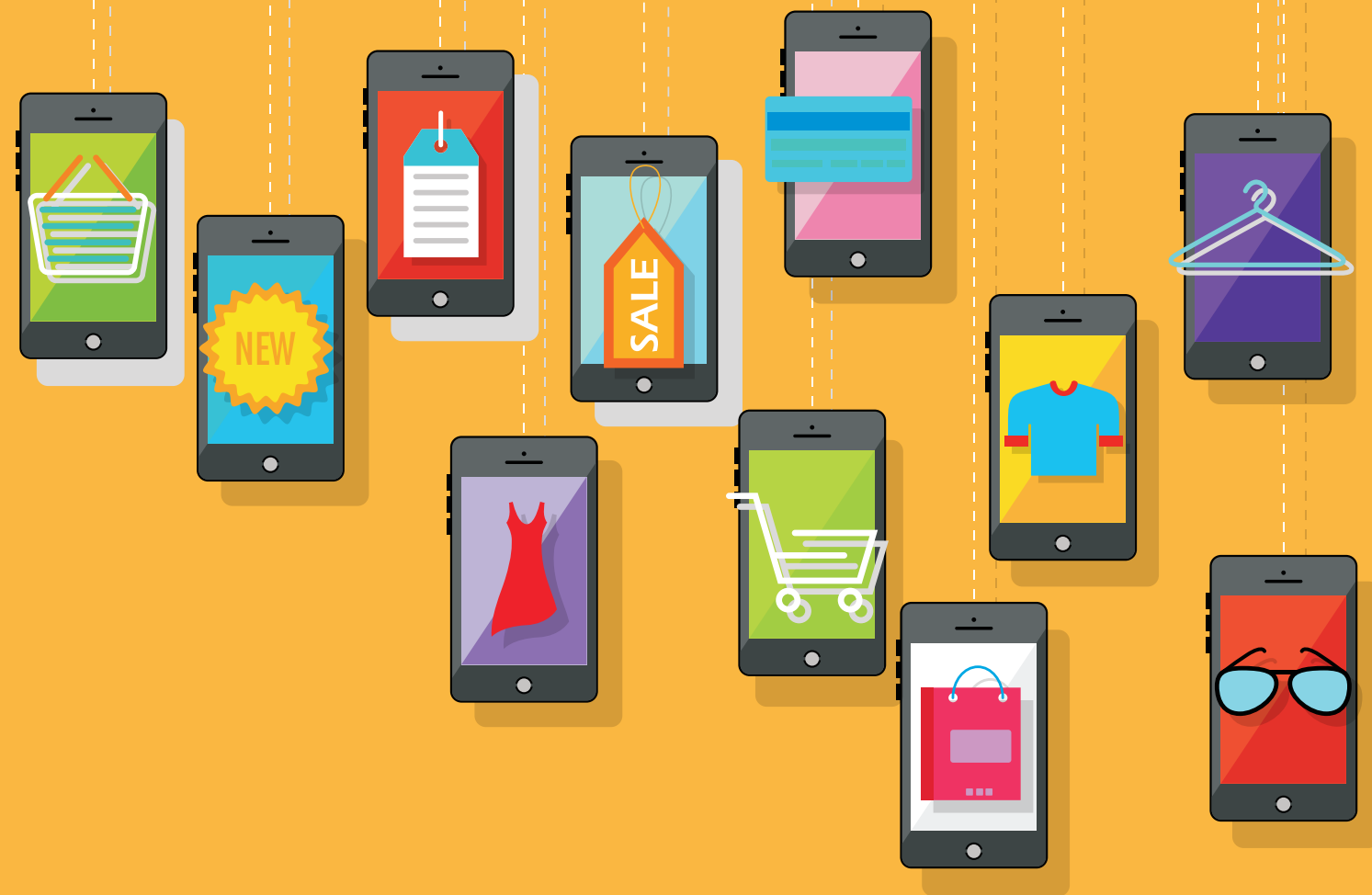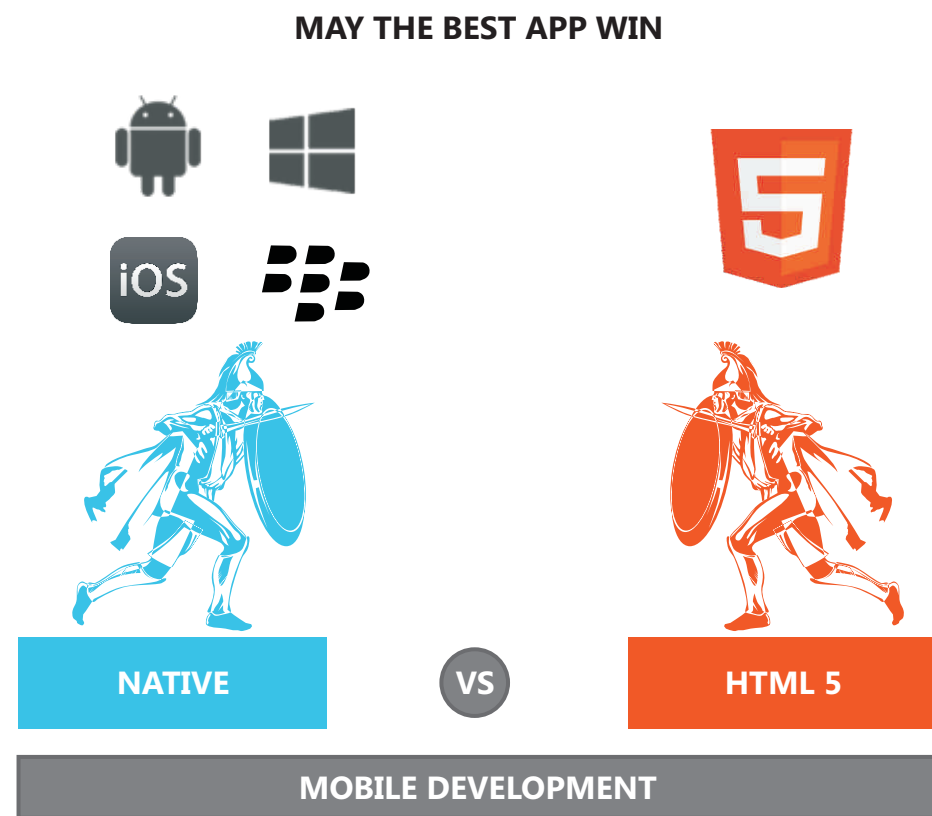
- Native Apps are specific to a given mobile platform (iOS or Android) using the development tools and language that the respective platform supports (e.g., Xcode and Objective-C with iOS, Eclipse and Java with Android). Native apps look and perform the best.

- Hybrid Apps make it possible to embed HTML5 apps inside a thin native container, combining the best (and worst) elements of native and HTML5 apps.

**WEB**    **HYBRID**    **NATIVE**

Reach ← → Richness

- WEB
- Minimal Training
- HTML 5/ CSS / JS

- HTML / CSS / JS
- Cordova / Telerik Platform

- Objective C / Swift
- Java
- C#

# Selecting the Right Mobile Architecture

The web/browser based approach is quite straightforward if the current PLM environment is already based out of Web client, it can easily be extended using JavaScript frameworks like Sencha to develop browser based apps. BeingJavaScript, it is a one-size-fits-all solution i.e. it will be available on almost all the devices at one go. Adding to it, by using Phonegap specific apps could also be developed for the devices to give the feel of launching the app.The other approach is where PLM clients are re-developed using Native Apps for devices like iPhone, iPad, Blackberry and each has to designed, developed using their own languages and SDK's i.e. Objective C for iPhone & iPad. The support for each version and agreement with Apple or Google has to be reviewed and approved.All the approaches have their own advantages and disadvantages. However, the usability, performance and look and feel of Native apps make it a winner. It is worth the wait to observe which direction the mobile PLM client flows in future.
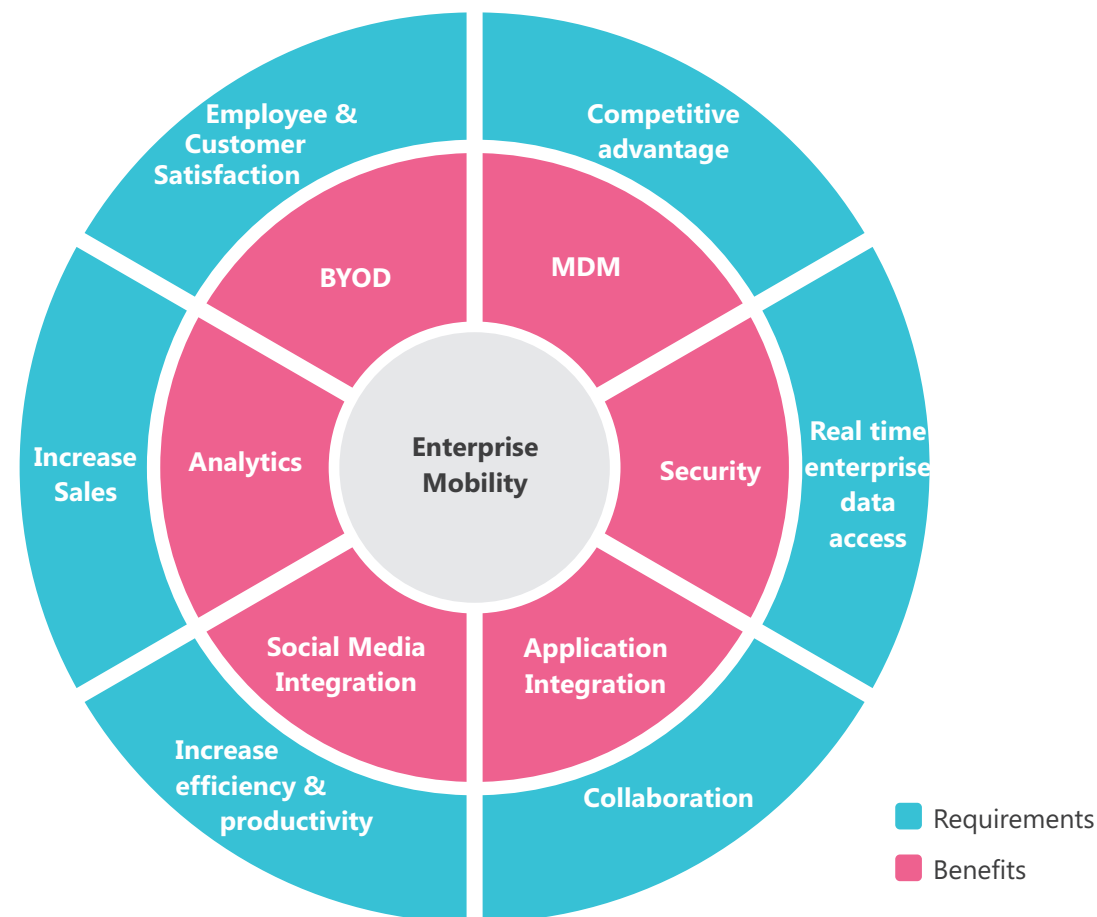
**MAY THE BEST APP WIN**



NATIVE  VS  HTML 5

MOBILE DEVELOPMENT

# Infrastructure and BYOD Strategies
## for Mobility based PLM System

An organization must have in place the right processes, policies and procedures to support a mobile PLM work force. There are three common deployment scenarios for iOS devices in the enterprise:

- Personalized device (BYOD)
- Personalized device (corporate-owned)
- Non-personalized device (shared)

While most organizations have a preferred model, you may encounter multiple models in your own environment – BYOD to CYOD. For example, a retail company may deploy a personalized device (BYOD) strategy by allowing employees to set up a personal iPad while keeping corporate resources protected and managed without impacting the user's personal data and apps. However, their retail stores may also deploy a non-personalized device (shared device) strategy allowing iPads to be shared by several employees in order to process transactions for customers. In the past, it was uncommon for the IT organization to allow "bring-your-own-device" (BYOD) programs, which allow employees to use their personal mobile devices for work. Today it is an acceptable and scalable solution approach for mobile deployment. While there are enterprise security and personal privacy issues that must be managed, as well as the need to maintain application consistency across a myriad devices and operating systems, employing BYOD practices helps reduce enterprise technology procurement and maintenance costs, while providing the opportunity to vastly improve productivity, efficiency and data integrity.



Employee & Customer Satisfaction
Competitive advantage
BYOD
MDM
Enterprise Mobility
Increase Sales
Analytics
Security
Real time enterprise data access
Social Media Integration
Application Integration
Increase efficiency & productivity
Collaboration

Requirements
Benefits

# Rise of the Enterprise App Store

Despite the rising penetration of post-PC devices and the rise of BYOD, enterprise and vertical app stores are still at a very early stage: traditional purchasing routes for enterprise software (i.e. direct sales, custom development, managed services) still dominate purchases, particularly among large businesses. The growth of post-PC devices in the workplace, either via the BYOD route or the corporate-issued route, is bound to make app stores a more appealing proposition for businesses. While professionals and SMBs are more likely to purchase apps from large consumer app stores like Apple and Google Play, larger enterprises will find enterprise-specific app stores more appealing.

Enterprise app stores can help enterprises manage app portfolios and reduce the security risks and administrative costs associated with software distribution and management in the bring-your-own-device, post-PC era.

# What next?
# Product Vendor Strategies &
# Future of Mobile PLM

Mobile applications for Product Lifecycle Managementusers are going through its early to mid-maturity cycle. Vendors are facing numerous problems and issues while developing their mobile strategies. To address the mobility need and the market trend, PLM productvendors are investing in their applications. The desire for increased mobility has created new products, product features and technical solutions from browser based access to the entire PLM suite of apps with functionality addressing specific lifecycles including trend, product development, quality assurance, fit and collaboration.To name a few Mobility Apps in PLM – PTC's WindchillPDMLink where shaking up the iPad leads to an exploded view of the assembly and another shake brings back to original state.Mobility in Product design has also been explored by Teamcenter mobile solutions and Aras's first PLM mobile solution. Centric PLM also offers various mobile applications for managing product development in the Retail, Footwear & Apparel space. ITC Infotech's Enterprise Mobility solution for PTC Retail PLM is another promising offering in the area of Retail, Footwear & Apparel industry.

The "Big Five" IT trends of the next half decade: Mobile, Social, Cloud, Consumerism, and Big Data enabling business success, it's crucial for companies to make the right, informed decisions on the solutions and platforms they use.To measure ROI of enabling Enterprise mobility solutions in PLM, benefits like adoption, application integration, employee productivity and user experience can be looked at.

So what is going to be the next big thing in PLM Mobility – are features like commenting on the product sample in parallel or workflow task completion or viewing the 3D model or perform factory auditthat will make Mobile PLM really useful? A collaborative tool or functionality that can get two or more team members responsible for Product design to come together through a PLM App and complete certain actions within a short duration is a need of the hour. The possibilities are endless – what if during reviews, a click on the associated member on the product could get you the status instantly? The concepts of camera, GPS and sensors like accelerators in mobiles and tabletscan all be fully used to helpusers to work smart – anytime, anywhere.

# References:

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2. Apple "iOS Enterprise Deployment Overview",

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4. Parker Avery Group POV on "PLM Mobility:Enabling Efficiency in an On-Demand World"

5. Beyondplm Article on "PLM Return on Mobility Challenges",

6. Tech-Clarity article on "Reducing Barriers to Engineering Decision-Making and Innovation",

7. Mobileplm blog on "Why Mobility in PLM is not catching up".

## About ITC Infotech

ITC Infotech, a fully owned subsidiary of USD 7 billion ITC Ltd, provides IT services and solutions to leading global customers. The company has carved a niche for itself by addressing customer challenges through innovative It solutions.

ITC Infotech is focused on servicing the BFSI (Banking, Financial Services & Insurance), CPG & R (Consumer Packaged Goods & Retail), Life Sciences, Manufacturing & Engineering Services, THT (Travel, Hospitality and Transportation) and Media & Entertainment industries.

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