

ENTERPRISE MOBILITY – A SOLUTION FOR INCREASED BUSINESS EFFICIENCY

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Abstract: The massive influx of mobile devices over recent years has radically altered ideas about employees' activity and the dimensions of business. The rapid development of business, mainly through increased staff mobility, has promoted various concepts like BYOD (Bring Your Own Device), CYOD (Choose Your Own Device) COPE (Corporate Owned, Personally Enabled), etc. This has brought to the fore issues related to ensuring constant staff involvement in the work flow and designing channels for accessing information with no constraints in terms of time, location, or the type of mobile devices used.

At the same time, businesses need to design strategies which ensure a balance between the convenience of using mobile devices and the security and reliability of corporate networks operation.

This paper reviews the essence of the BYOD concept and the benefits it brings to business; it makes a comparison with the CYOD concept and analyses the COPE alternative, its nature and feasible approaches for its implementation.

Key words: BYOD ,CYOD, COPE, COBO, enterprise mobility.

JEL: C80; L63; M21.

Introduction

The dynamic growth of information technologies provides a number of opportunities for increased business efficiency. Information mobility is the latest trend in IT which significantly raises productivity and efficiency and puts companies in a state of transition. It is therefore essential to design adequate strategies and to develop specific schemes which will

produce efficient results, since enterprise mobility is a major technology in terms of opportunities for encouraging business development. IT management must become aware of concepts like BYOD, CYOD, and MDM to guarantee the successful introduction and management of mobile devices, and hence, improved business efficiency.

1. The BYOD Concept and Its Benefits to Business

The BYOD concept (Bring Your Own Device) relates to the use of consumer devices in the implementation of business processes and tasks and the future integration of personal mobile devices of employees into corporate infrastructure¹. Generally, this includes smart phones, tablets, laptops and home computers which are used to solve specific tasks and to access various applications and data base.

The concept evolved as a result of the rapidly growing availability of mobile devices in the last years and their introduction into all spheres of life and is considered to be a major issue for contemporary IT managers². As a matter of fact, the focus which IT has on consumers nowadays is an ultimate example of the fundamental transformation which the relation between employers and employees (and IT specialists in particular) started undergoing several decades ago.

The benefits from implementing this initiative might be grouped into several points³:

- Productivity – the major benefit to business is increased managers and employees' productivity both in terms of the tasks to be solved, and in terms of the efficiency with which they are solved;
- Cooperation and communication with co-workers and better end results achieved in teamwork. This helps save thirty-seven minutes

¹ BYOD security challenges: control and protect your most sensitive data, 2012, <http://www.sciencedirect.com/science/article/pii/S1353485812701113>, (12.05.2016)

² **Khalyapin**, S. BYOD (Bring Your Own Device) – Prinesi Svoe Sobstvennoe Ustroystvo, Nov 2, 2013, <https://www.citrix.com/blogs/2013/11/02/byod-bring-your-own-device> (07.05.2016)

³ **Varbanov**, R. Prilozhenie na kontseptsiyata BYOD – predimstva, riskove i podhodi.// Biznes Upravlenie, No. 2, 2014, ISSN: 0861-6604

per employee per week on average (eighty-one minutes in the USA), and in 53 per cent of the cases, labour productivity has increased due to innovative work practices implemented via personal devices. In addition, 36 per cent of consumers save at least two hours weekly by using popular and user-friendly mobile devices to communicate and collaborate, according to the findings of a research conducted by CISCO in five countries in 2013⁴;

- Lower costs, including reduced mobility costs since employees cover all or some of the costs for the maintenance of mobile devices; companies save on the funds they would otherwise spend on mobile devices; corporate IT resources are used more efficiently. Furthermore, costs on IT maintenance and services decrease sharply since users are more confident in using their personal devices and seek help from IT specialists less frequently;
- Higher job satisfaction as employees can choose devices which they are already familiar with and use in their personal life. What is more, the BYOD concept helps bridge the gap between corporate technologies (which are conservative, clumsy, and highly restrictive) and consumer technologies and solutions which evolve constantly and offer greater comfort, easier communication, and multiple functions thus making smart phones and tablets preferred devices for both personal and professional activities;
- Flexibility – the BYOD initiative allows employees to work efficiently not only at their work place but also during their time away from the office in the comfort of their homes or while travelling;
- New opportunities for employees to combine efficiently their personal and professional activities, which is one of the major advantages of the BYOD initiative.

The use of mobile devices in business relates to further advantages like designing and maintaining new channels for interaction with customers, employees, and business partners; more efficient cooperation with

⁴ Cisco IBSG Horizons. The Financial Impact of BYOD. A Model of BYOD's Benefits to Global Companies. May 2013, http://www.cisco.com/web/about/ac79/docs/re/byod/BYOD-Economics_Presentation.pdf. (07.01.2014)

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colleagues and better results achieved in teamwork; more efficient exploitation of IT resources; improved social climate in companies.

It is important to outline the problems⁵ related to the implementation of the method, too. They refer mainly to sensitive data processing, the wide range of devices used, the vulnerability of mobile devices, etc.

Growing interest in the BYOD method has affected business managers and executives who cannot ignore the phenomenon. IT managers are increasingly embracing and supporting mobility in the workplace. Nearly 77 per cent of IT managers are planning to permit the use of personal mobile devices to access corporate data and applications; 56 per cent support the increased demand for mobile devices on behalf of their employees; 41 per cent of senior-level decision-makers believe that costs are a crucial challenge related to the BYOD initiative; 30 per cent are confident that laptops may soon be replaced by tablets; and nearly all heads of IT departments think they will be able to provide more than 25 mobility applications in the next few years⁶.

We may conclude that it would be extremely difficult to make a general assessment of the deployment of mobile devices in enterprises or to suggest universal solutions to related problems. Despite the numerous benefits which the BYOD phenomenon offers to enterprises, there are no ready-made strategies or approaches for its introduction into business. Each situation must be assessed individually in terms of the particular entity where the method will be applied.

2. Alternative Concepts of Enterprise Mobility

While users have their individual preferences for devices and many prefer the device they have at home, companies may prepare a list of approved devices to meet the demands of a worker or employee and those

⁵ The Business Risks and Benefits of Bring Your Own Device (BYOD), <http://www.bluechip.co.uk/blog/business-risks-and-benefits-bring-your-own-device-byod>. (20.01.2014)

⁶ Mobility disruption: A CIO perspective. A report from McKinsey & Company, based on a survey of 250 CIOs on their mobility strategies. MOBT_27_Mobility_disruption-A_CIO_perspective.pdf (16.05.2016)

of the enterprise. That is how the CYOD concept (Choose Your Own Device) evolved. CYOD offers a culturally-based approach to mobile enterprise environment in which devices can be preconfigured with all necessary applications to ensure employees' productivity and protect sensitive data. These applications may be present or accessible via a mobile device.

Companies where the CYOD approach is implemented are responsible for the selection and purchase of all devices⁷. This gives rise to various problems mainly relating to the Mobile Device Management⁸ (MDM). While MDM software may be installed in advance and devices preconfigured (thus making the process of placing orders predictable), issues related to the ownership of devices may still pose a serious challenge. Device suppliers may help enterprises cope with these problems through a number of activities such as the maintenance and optimization of any mobile environment, thus ensuring maximum insight and efficiency.

Compared to the CYOD⁹ concept, BYOD ensures greater flexibility of mobile devices since their owners are able to use them virtually anywhere. Users purchase and maintain their own devices and even install applications. The challenges posed by this concept refer to data security, experience consistency, support expenses, policy and integration¹⁰.

In contrast, the CYOD concept is based on pre-determined and approved devices¹¹ which are owned by the enterprise and may be utilised

⁷ MOBILITY: BYOD VS. CYOD, 2013, https://www.insight.com/content/dam/insight/en_US/pdfs/insight/solutions/cyod-datasheet.pdf

⁸ Upravlenieto na mobilni ustrojstva stava vseobхватno, 2015 Networkworld Bulgaria – No. 2, http://networkworld.bg/1042_upravlenieto_na_mobilni_ustrojstva_stava_vseobхватno (16.05.2016)

⁹ **Brodin**, M. BYOD VS. CYOD – WHAT IS THE DIFFERENCE?, 9th IADIS International Conference Information Systems 2016, University of Skövde, p.58, ISBN: 978-989-8533-50-0

¹⁰ **Gopalakrishnan**, T.R., Nair, Arifusalam Shaikh. Information Mobility and Business Transforms, International Research Journal of Electronics & Computer Engineering Vol 1(1) Apr – Jun 2015, p.20 ISSN: 2412-4370

¹¹ **Toshiba**: Potentsialat na strategiyata CYOD pred BYOD v sektora na malkite i sredni predpriyatiya, <http://www.maxtablets.com/2015/12/toshiba-cyod-vs-byod-malki-sredni-predpriyatiya.html> (14.05.2016)

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anywhere. In most cases, companies purchase, own, and maintain the devices, while employees may choose from an approved list in a custom online portal. Related challenges include security and scalability.

Successful IT enterprises must solve mobility challenges by applying an integrated solution whether they will choose to embrace the BYOD or the CYOD strategy. Related approaches may include fast and efficient interaction; ensured access, and if necessary, rapid deployment; stronger quality control measures; and a greater number of people collaborating.

Recently, a substantially different approach to enterprise mobility, COBO (Corporate Owned, Business Only)¹², has been discussed widely. The approach is described as highly conservative, since according to the COBO concept enterprises own mobile devices and strictly prescribe how employees shall use them.

When designing a policy based on the COBO approach, enterprises often introduce a clause prohibiting the use of smart phones, tablets, or any other devices. Restricted access to the wide variety of resources on the Internet, social networks, and broadband Internet has proved to be the major shortcoming of the COBO approach since the introduction of similar restrictions has resulted in employees' preference to bring their personal devices to their work place so that they could use a single device to for their work and personal communication.

A reasonable alternative, the COPE strategy, has evolved to strike the balance between the rigidness of COBO and the anarchy of BYOD. The underlying principles of COPE (Corporate Owned, Personally Enabled)¹³ contradict the ideas of the BYOD concept and its deployment causes significant problems to IT departments. COPE's ideology relies on a centrally designed plan which ensures the choice of a device from a list of preconfigured devices approved by the enterprise. The devices are owned by the entity and are designed to be used for both work and personal communication. A lot of specialists are confident that COPE combines the strict control of the COBO method and the freedom offered by the BYOD

¹² BLACKBERRY COBO: ENTERPRISE MOBILITY OPTION FOR REGULATED AND HIGH-SECURITY ENVIRONMENTS BLACKBERRY COBO : ULTIMATE MOBILE SECURITY AND CONTROL, 2014, http://us.blackberry.com/content/dam/bbfoundation/pdf/case-study/na/en/COBO_Whitepaper_Letter.pdf

¹³ COPE vs. BYOD vs. CYOD – How Should an Enterprise Choose?, March 31, 2015, <http://www.itbriefcase.net/cope-vs-byod-vs-cyod> (14.05.2016)

model. From a practical standpoint, the COPE model facilitates imposing a significant level of mobile management across the entire enterprise, which typically involves multiple risk profiles and insecure connections. Hence, IT managers exercise tight control through a small number of operating systems thus ensuring high productivity and data security while at the same time IT risks are mitigated and overloading corporate networks is avoided.

We should point out the difference between COPE and CYOD despite the similar ideas which they are based on. When enterprises choose the CYOD model, employees have to pay for the upfront costs of the hardware, whereas the business owns the SIM and the contract for greater visibility, control and potentially lower costs¹⁴.

We may therefore conclude that COBO is the most conservative approach with its multiple bans and restrictions, while BYOD is the approach least related to restrictions. COPE may be approached as an option which is less conservative than COBO and imposes tighter control than BYOD, in other words, it is a liberal approach which combines the strengths of different policies of enterprise mobility and aims to satisfy end users' needs and improve business performance at minimum IT risks.

3. Applying COPE - Related Issues and Challenges

The evolution of enterprise mobility has resulted in the convergence of working conditions which allows the establishment of a positive environment for the adoption of COPE-based policies¹⁵. There are three major issues which need to be considered when designing and implementing these policies – concerns with the disruptive effect which BYOD might produce in the long run; the maturity of a particular device to be managed and overseen by the enterprise; and the ability of COPE to provide to IT departments the opportunity to impose flexible and granular

¹⁴ BYOD, COPE or CYOD? The alphabet soup of mobility strategies, 2014, <http://www.tgdaily.com/enterprise/127411-byod-cope-or-cyod-the-alphabet-soup-of-mobility-strategies#jXjHcQGmMjzZWPGC.99> (08.05.2016)

¹⁵ BALANCE END USER SATISFACTION AND BUSINESS PRODUCTIVITY, 2014, <http://us.blackberry.com/content/dam/blackBerry/pdf/business/english/Case-for-COPE-Whitepaper.pdf> (13.05.2016)

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mobility policies which meet productivity and usability needs without leaving entities vulnerable to legal actions, data leakage, internal attacks, etc.

These three major issues may be further considered as:

- Long-term BYOD concerns¹⁶. BYOD is an extremely liberal model of corporate mobility as it promotes the use of personal devices and applications for the implementation of work-related activities. This makes employees more productive even when they need to work extended hours. As BYOD matures and expands within enterprises, however, information becomes more vulnerable, serious challenges to oversight and management appear, as well problems related to security, legal risks, etc. BYOD may thus prove not to be an attractive cost-saving decision and businesses may start to seek more efficient alternatives.

- Work/Life isolation. Many companies apply the containerisation method that enables them to isolate corporate from personal data on mobile devices. By employing this approach, IT departments are able to significantly streamline oversight on devices via different operating systems and introduce a common user model across a variety of devices and operating systems.

- Centralised oversight. The introduction of standard oversight and governance rules across the entire enterprise helps reduce the costs related to the complexity of mobile device management.

- Flexibility and adaptability, i.e. applying various approaches related to diverse devices, combinations of strict rules for network and sensitive data access, reduced number of device options.

- Cutting down the multiple device chaos – the number of mobile devices may be limited to a manageable number, thus providing end users with a meaningful, though modest, selection of devices. IT departments can thus achieve user satisfaction while significantly reducing the complexity of device and application management.

- Avoiding litigation and conflicts, i.e. ensuring that all personal data on mobile devices and the privacy of end users will be protected in the

¹⁶ 10 BYOD concerns that go beyond security issues, 2012, <http://www.techrepublic.com/blog/10-things/10-byod-concerns-that-go-beyond-security-issues/> (15.05.2016)

event of a stolen or destroyed device may reduce the risk of legal actions from employees against the enterprise.

- Tightening the content control relates to the design of procedures which enable enterprises to closely monitor corporate content in compliance with regulatory requirements.

COPE is an attractive model of enterprise mobility which brings numerous benefits to companies as well as satisfaction to consumers. To efficiently apply the principles of the approach, relevant procedures and solutions related to control, employees' freedom, reasonable restrictions, and legal neutrality need to be designed.

* * *

Rapid advances in enterprise mobility and mobile device management have created an environment in which even strictly regulated industries allow their employees to use devices approved by the enterprise for their communication and business activities, as well as for entertainment like accessing social media and networks, playing games, etc. The benefits from the use and management of mobile devices and applications, the fast rate at which employees are going mobile and the projected impact which this trend will have on the ability of enterprises to provide corporate data via an increasingly diverse collection of mobile devices owned by their staff prompt line-of-business managers to consider complements to or alternatives of the BYOD concept. The COPE concept is rapidly gaining popularity due to its ability to combine BYOD's freedom and COBO's conservatism as models of enterprise mobility. The major advantage of COPE is the solution it offers to the issue of introducing efficient security measures for protecting corporate data without restricting users or performance. The opportunity provided by COPE to use mobile devices configured by enterprises is an instance of unprecedented control and strict compliance with a set of rules promoting the further development of enterprise mobility.

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