A Study on the Tizen Operating System

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Abstract— **Technology is advancing at the speed of light. The one dominating the market today might be the least selling tomorrow. This is what Tizen Operating System (OS) developers expect in the future. Earlier, IOS was the largest selling operating system. Then, Google launched its Android OS in the market, which snatched the spotlight from IOS. Android currently has the market share of 75% to 80% and is the top grossing OS ever since. Now, Tizen has joined the series and is expected to take a lead over Android. This paper aims at presenting the key features of Tizen operating system that makes it a strong challenger to the current operating systems.**

Keywords— **Tizen, Operating System, Smartphones, Linux Kernel.**

I. INTRODUCTION

Tizen is an open source, cross-architecture software platform based on Linux supported by leading mobile operators, device manufacturers, and silicon suppliers for multiple device categories such as smartphones, tablets, netbooks, in-vehicle infotainment devices, and smart TVs. Tizen offers a fertile OS, applications, and a user experience that consumers can get from device to device. The Tizen OS is driven by a movement to create an alternative, less expensive mobile market platform. Developers hope the Tizen ecosystem will give both vendors and consumers more flexibility than is offered by existing mobile ecosystems [5]. Tizen is a project that resides within the Linux Foundation and is administered by a Technical Steering Group (TSG) composed of Samsung and Intel among others [3]. The TSG is the primary decision-making body for the project and focuses on architecture and implementation, along with the formation of working groups to support device verticals. The Tizen Association is led by a group of mobile operators responsible for active development of the ecosystem around Tizen. This development work involves market presence, gathering requirements, identifying and facilitating service models, marketing and education. The list of association partners includes eBay, Konami, Panasonic, Sharp, TrendMicro, TuneIn Radio, Sharp Electronics, Samsung and Panasonic. This paper is structured as follows. The Section 2 of the paper throws a light on the background. Then in Section 3, keys features of Tizen are discussed. Section 4 lists the challenges faced by Tizen in strengthening its roots in the OS market. Section 5 presents concluding remarks on the Tizen Operating System.

II. BACKGROUND

Among all modern-day mobile operating systems, Tizen OS has had conceivably the most boisterous and multifaceted history. First there was Nokia's Maemo and Intel's Moblin, before the two companies agreed to chain them together into MeeGo, in collaboration with chief hardware and software partners. Then Nokia decided to put all its eggs in Windows Phone's basket, and left the platform after releasing the amazing N9 running MeeGo with Nokia's Harmattan UI that won hearts of users and critics alike, regardless of not making many sales due to Nokia's abandonment. While all this was happening, Samsung also decided to build an open OS of its own in order to drop its reliance on Android, and the result was Bada. After Intel's abandonment, the future looked miserable for MeeGo, and it indeed showed out to be so as well. The OS was shortly uninhibited completely by all other cliques as well, and Tizen was born under the aid of The Linux Foundation. Later, Samsung decided to join the picture as well and merged Bada with Tizen.

III. FEATURES

1. Flexibility

Tizen is an open source operating system based on the Linux kernel and WebKit runtime [6]. This means that users can get the source code that Tizen is based on, allowing smartphone owners to tinker with and alter a device's software. Its main feature is its compatibility with multiple mobile platforms; which means that applications made with the Tizen OS are compatible and can be launched in other OS like the IOS and Android, with a slight code change. This feature of the Tizen operating system attracts developers because their application will not only be used by the Tizen market but with the IOS and Android as well. This is undoubtedly a big advantage over the existing android and IOS development that lets apps to run only on their own OS. This factor can indeed be appealing for both developers as well as establishments who want their apps in all major platforms.

2. Versatility

Tizen allows a wide variety of application development which can run across multiple device categories. This could be achieved primarily because of highly optimized HTML5 support in Tizen. An app on Tizen coded in HTML5 would run on everything from smartphones to laptops and even to devices such as TVs. HTML5 is the latest version of Hypertext Markup Language, the code that expresses web pages. HTML5 has been designed to convey almost everything you would want to do online without requiring any additional software such as browser plugins. It does

everything from music to movies, animation to apps, and can also be used to build incredibly complex applications that run in your browser. HTML5test.com, which indicates how well a browser supports the approaching HTML5 standard and related specifications, reports that Tizen is at the top of the list of mobile phone browsers. With HTML5 rivaling the functionality, swiftness, performance, and experience of platform-specific development, HTML5 is progressively being considered for many mobile apps and services. Its mobile apps are written using HTML5, while other well-known mobile phone operating systems use Java and Objective-C which are rather inferior. HTML5 essentially permits a smoother Web browsing experience for mobile devices, such as the capacity to display embedded videos or play music without an additional plugins and save data offline.

3. Personalization & Customization

Tizen is designed to make it economical and feasible to tailor its features to specific user markets. A developer can easily remove the operating system components for running the apps that user do not require. As a result, Tizen will allow carriers and developers to take the core OS and customize it for the specific market the phone model targets [7]. This is a differentiator where Tizen performs much better than other mobile Operating Systems.

IV. CHALLENGES AHEAD

Support and availability of applications can be a major decisive factor when resorting to Tizen. Supporting both, native and web apps alike, Tizen store is already set with apps even before the OS has been launched, but it's not comparable to Android and IOS counterparts. There's no denying that Samsung and Intel are pushing developer to support their Tizen platform. If history teaches us anything though, it's that mobile OS' live or die by the wealth of apps present in their app stores. So, with that in mind, it's safe to say that Tizen will have to pull out all the stops to attract the interest of third party developers and get them creating superior apps to entice a potential user-base.

V. CONCLUSION

From initial findings, Tizen looks promising operating system with a solid backing from big names Samsung & Intel. It has various features which gives it an edge over other OS. Tizen will have to push really hard to gain the top spot, it has various features to do so but require a strong application database.

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