TIZEN OPERATING SYSTEM

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INTRODUCTION

- Tizen is an open source operating system that can run for multiple device categories.
- These include Smartphone, tablet, net books, Smart TV and purposely car navigation systems.
- Tizen itself is a collaboration project of Linux Foundation and is governed by a Technical Steering Group composed of Samsung and Intel.
- Tizen was developed under Linux-kernel and Web Kit runtime. Being developed under Linux means that users can obtain source code and modify the software.

Figure illustrates how TIZEN OS inter related with mobiles, laptops washing machines etc.,

- Tizen is a broadly supported industry effort to create and to grow a new , open and flexible mobile operating system.

- Its built-in flexibility empowers operators, OEMs and developers to create applications, services and business models that enhance their brand and meet the needs of a broad consumer base.

- As an open source software platform, Tizen is expected to be a fast, simple and affordable path to creating and supporting these new offerings, and is designed to make it easy to develop for a range of devices while still delivering superior performance.

NAMING:

- Tizen is a crisp, strong name that matches the scope and capabilities of this new open source operating system. The name was created by combining the connectivity of “tie,” the activity of “rise” and the meditative qualities of “Zen.”

- Together,the name represents an operating system that works with you and gives you the easiest access to your mobile life.

Developing cycle:

- 2005: Maemo (Nokia)
- 2007: Moblin (Intel)
- 2010: MeeGo (Nokia, Intel, other major hardware & software companies)
- 2010: Bada (Samsung : for less Android dependance)
- 2011: MeeGo abandoned by Nokia (for Windows Phone)
- 2011: MeeGo abandoned by Intel, and then by its other supporters

Cycle contd.

- 2011: LiMo 4 (LiMo Foundation – Samsung collaboration)
- 2011: Intel joins LiMo, which is renamed Tizen
- 2012: LiMo Foundation is renamed Tizen Association
- 2012: Samsung has aim to merge Bada with Tizen
- On September 25, 2012, Tizen released version 2.0 alpha, code-named Magnolia

Cycle cont.

- On February 18, 2013, Tizen released version 2.0, code-named Magnolia
- On April 2013 Samsung announced Tizen
- On May 17, 2013, Tizen released version 2.1, code-named Nectarine.
- On July 22, 2013, Tizen released version 2.2.
- On November 9, 2013, Tizen released version 2.2.1.
- On November 8, 2014, Tizen released version 2.3.

Features:

- • Middleware Enhancements
- • New Built-in Application Features
- • Built-in Application Highlights
- Platform Core Highlights
- Web Runtime
- Multimedia
- Web APIs

Installation:

Tizen SDK Installation

we can choose two ways for installing Tizen on your Android device :

- Full system wipe and installation
- Use kexec to multiboot your device

Installation through Linux:

In short, kexec is Linux booting itself. In less short, it is a syscall that allows a Linux kernel to boot another Linux kernel without restarting the device. As of every technic there are advantages and disadvantages to use this :

Advantages :

- Does not require a device restart : boot faster
- For Android it is a bit like having fastboot inside the device
- Skips the bootloader

Disadvantages :

- Skips the bootloader
- Boot over the previous kernel and get the RAM in an intermediate state
- Does not work on Nexus 7

Why Tizen:

- Tizen is seen as a new competitor for Android and Apple iOs.
- In my opinion, Samsung urges to develop Tizen in order to cut off its dependency to Google.
- For example, Galaxy S4 is known to be the most popular SmartPhone in the world. This success brings Samsung to compete with Apple. At the same time, this achievement also brings Android to a high success as mobile operating system. Therefore, Samsung might probably thinks that if they can develop their own mobile phone OS, they can gain success in both smart phone devices and also Operating System.

Measures to success

New Entrants (Medium) :

- Due to competitive environment, New Entrants are reluctant to join the competition.

Substitutes (Medium):

- OS is not an easy to substitute product. Once a system is installed, most likely user will have to use it all the way.

Threats from Buyers (High) :

- Big electronic manufacturers are the main target for Tizen. System Lock-in between manufacturers with incumbent makes it difficult for Tizen to win buyers.

Suppliers :

- For Mobile OS, Tizen must build up their Application collection .Therefore, Application developers are the suppliers for Tizen.

- Samsung is an electronic product manufacturer, so Tizen does not have any threat in term of supplier side.

- However, judging from Tizen capability, It's not only capturing Smartphone market, but also bigger operating system market.

- This shows us that Samsung is looking forward to keep ahead of the competition.

- Furthermore, Since they know the failure of similar OS for mobile that comes from Blackberry and also WebOS, they try to minimize the lost just in case Tizen for Mobile OS fails.

SWOT Analysis:

Strengths

- Joint forces between three big companies , Linux , Samsung and Intel.

- Samsung Status as electronic manufacturer. This will be Tizen major strength , availability of devices that will use it as OS. Google android success is also because of Samsung Galaxy S4. That's why, Tizen can replace Android and installed at all Samsung Products. When this happens, Android will have major competitor.

SWOT Cont.

Weaknesses

- Similar concept with Android, but late in entering the market.

Opportunities

- Blue ocean market for Open OS in SmartTV,camera and other devices except Mobile
- As far as I'm concern, Tizen is the first Operating system for SmartTv and other devices. So Tizen will be the first to enter the market for this industry.
- Samsung as electronic companies can apply Tizen to all its product.
- In-Vehicle infotainment (IVI) is supported by Jaguar. Jaguar is not the only car manufacturer that provides IVI. That's why, Tizen can offer its IVI to many car manufacturers all over the world.

SWOT Cont.

Threats

- Too much dependent to Android, Samsung is already closely related with Android. Introducing new OS might decrease level of trust from Samsung customers.

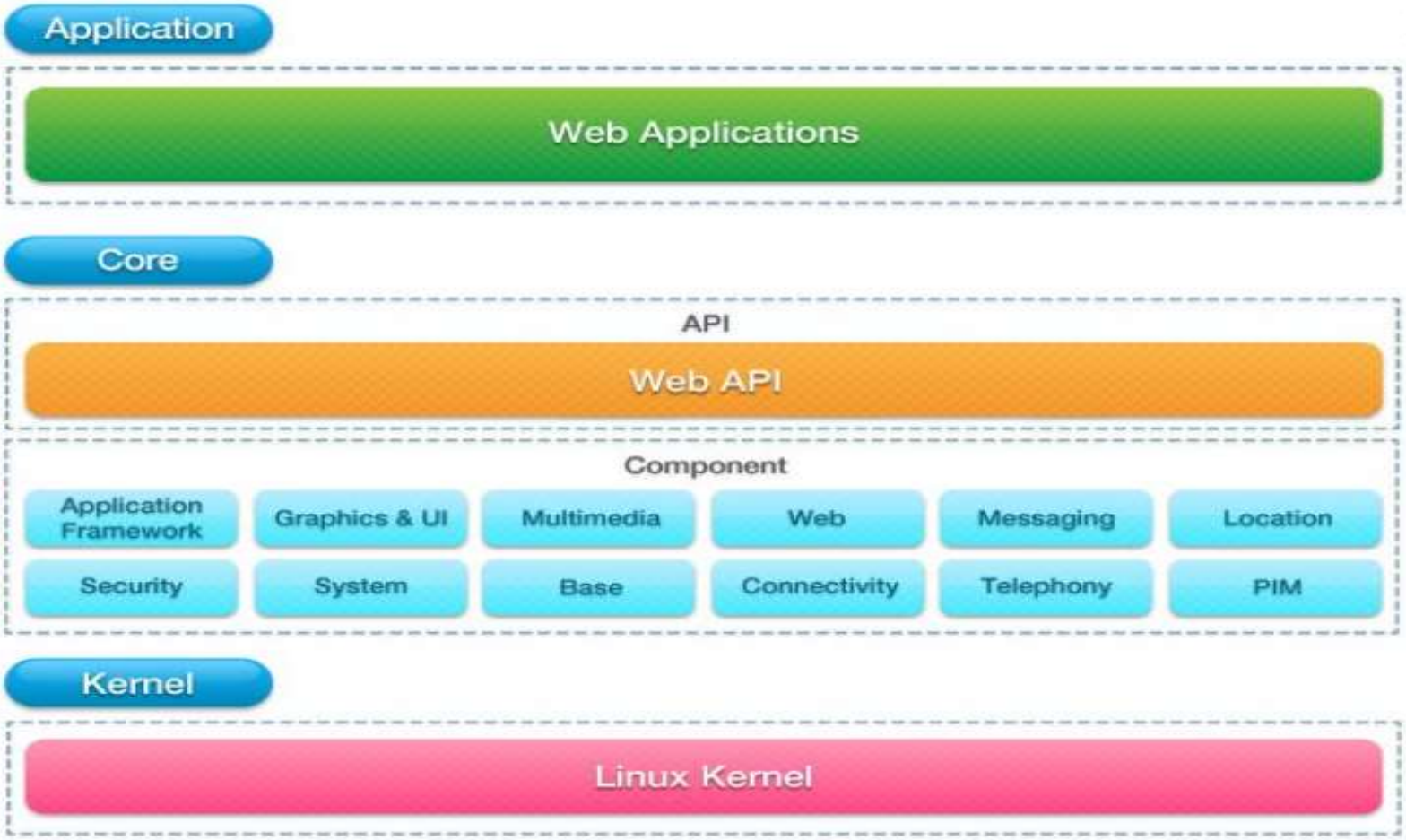
- Both Android and Apple has their own application store. When Samsung intends to introduce Tizen, means Samsung have to prepare for a new Application market similar.

The Red & Blue Ocean Market

- Basically, what Tizen is currently competing can be seen from two different perspectives. The first one, Tizen competes in a red ocean market along with top-notch companies such as Microsoft , Android and Apple.

- On the other side, Tizen also covers compatibility for SmartTv,camera, car navigation system and other devices. This second industry can be seen as Blue ocean market.

ARCHITECTURE:



Tizen Core Services

Application Framework –

- The Application Framework provides application management, including launching other applications using the package name, URI type.
- It also launches pre-defined services, such as the system dialer application. The Application Framework also notifies applications of common events, such as low memory events, low battery, changes in screen orientation, and push notification. Furthermore, database and settings support are provided by Application frame work.

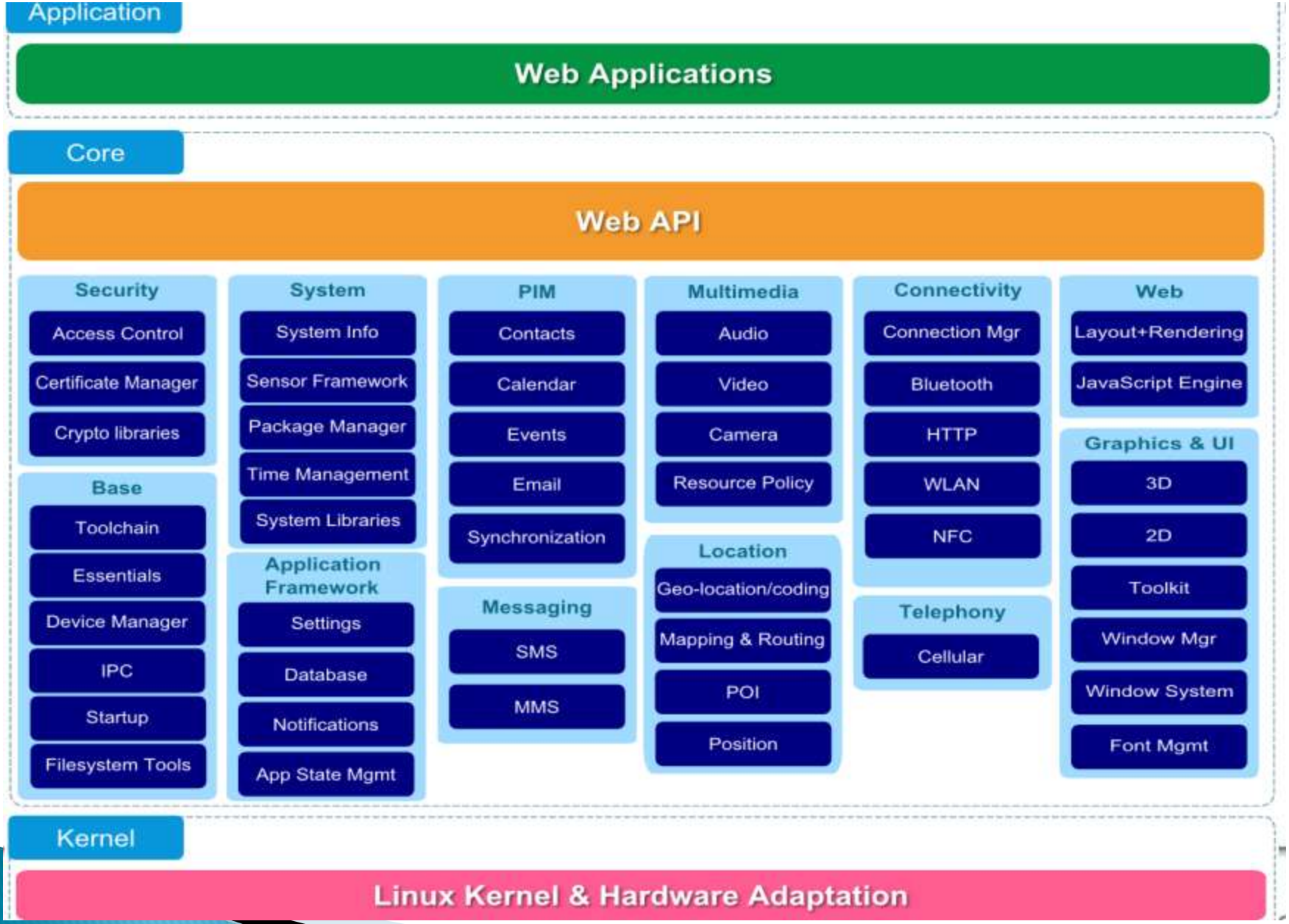
Base

- Base contains Linux base essential system libraries that provide key features.

- The Base is defined as self-sufficient and with packages in Base the system is able to boot itself to console/login. It also includes database support, internationalization, and XML parsing.

Graphics and UI

- Graphics and UI consist of the system graphic and UI stacks, which includes EFL (Enlightenment Foundation Libraries), window management system, input methods.
- EFL is used to create rich graphics with ease, for all UI resolutions. The libraries build UIs in layers, allowing for 3D transformations and more. EFL includes the canvas API library and the elementary widget


Application
Web Applications
Core
Web API
Security
Access Control
Certificate Manager
Crypto libraries
Base
Toolchain
Essentials
Device Manager
IPC
Startup
Filesystem Tools
System
System Info
Sensor Framework
Package Manager
Time Management
System Libraries
Application Framework
Settings
Database
Notifications
App State Mgmt
PIM
Contacts
Calendar
Events
Email
Synchronization
Messaging
SMS
MMS
Multimedia
Audio
Video
Camera
Resource Policy
Location
Geo-location/coding
Mapping & Routing
POI
Position
Connectivity
Connection Mgr
Bluetooth
HTTP
WLAN
NFC
Telephony
Cellular
Web
Layout+Rendering
JavaScript Engine
Graphics & UI
3D
2D
Toolkit
Window Mgr
Window System
Font Mgmt
Kernel
Linux Kernel & Hardware Adaptation

Screen shots of Tizen operating system

SCREEN SHOTS

- Z1

LOGO

- New logo


THANK
YOU