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FancyPants for Device Manufacturers and Software Solution Providers

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1 Setting the Scene

1.1 Marketing 101: Product Differentiaton and Branding

For the manufacturers of consumer appliance and electronics, the competition is fierce. The cost of manufacturing is dropping leading to increased competition. The ability to differentiate products and carve out market share based on the manufacturing process alone is disappearing.

Yet in order to retain market share manufacturers must give something to their customers that cannot be obtained elsewhere. They must provide something that is desirable and unique. Furthermore, they must link that uniqueness to their brand so customers keep coming back.

1.2 Toshiba Laptops: A Case Study

Up until around 2003, Toshiba had cornered the laptop market selling design style and quality. Customers paid a premium for the Toshiba brand.

Today Toshiba's market share is significantly diminished. While still in the top 7 laptop manufacturers worldwide, they no longer enjoy market dominance. Except at the high end, Toshiba now competes primarily on price. There is no compelling reason for customers to buy a Toshiba in preference to a Dell, HP or Asus.

What Went Wrong?

Firstly, Toshiba's advantage in design vanished. While still able to claim the world's lightest laptop, this kind of design has become much better understood over time, so that now there are many laptops with similar features and sizes available.

Secondly, Toshiba invested in manufacturing in China and The Philippines, foregoing the high quality manufacturing in Japan for cheaper options. The result was a degraded quality product.

Lastly, and most critically, Toshiba did not invest in creating a brand by differentiated software.

The result is that today, consumers buys a Microsoft Windows laptop rather than a Toshiba, or Dell, HP, Asus or other brand. Because the hardware is commoditised, there is no way for one manufacturer to differentiate from the another.

The only laptop manufacturer to compete on its own terms is Apple.

1.3 Today's Mobile Phone Market

Fast forwarding to today shows a very similar story being played out in the mobile phone market.

HTC, Motorola, SonyEricsson, LG and Samsung all ship mobile phones based on Google's Android software stack now and many other companies have announced plans to do so as well.

Google's licensing terms, at least for now, specify much of the hardware definition, such as the screen resolution. This narrows the opportunity to differentiate even further.

When consumers encounter these Android phones in the channel, side by side, they will see a collection of Google phones rather than phones from HTC, Motorola, SonyEricsson, LG and Samsung.

Reality, however, is more complex. Both HTC and Motorola have correctly understood that they must invest in a differentiated Google Android product in order to create and preserve their postion and branding going

forward. HTC has created the Sense UI which is similar in concept to their TouchFlow UI, developed for their Windows Mobile products. Motorola have recently announced the Blur UI which integrates social networking services.

Both HTC and Motorola have invested substantially into the research and development of user interfaces for mobile leading to unique products in the market. The investments made will pay off. Consumers are attracted to new and unique products and are prepared to pay for them.

Meanwhile Apple still plays by its own very successful rules. There are no plans for an Apple Android phone just as there are no plans for a Samsung or Motorola iPhone.

2 A User Interface Personality Framework

2.1 What is a UIF?

In traditional mobile and embedded applications, the application code is tied closely to the user inteface implementation, determining the type, orientation, placement other attributes of objects on the display.

A UI Personality Framework, or UIF, is a software framework that separates the application logic from the presentation, or look and feel, for an entire suite of applications.

VisionMobile (`www.visionmobile.com`) is one of the world's leading market analysis and strategy firms for the mobile industry According to Andreas Constantinou, principal, of VisionMobile:

> "UIFs (UI Personality Frameworks) are designed for rapid development of new user interfaces, reducing the time to radically change the handset UI from 18 months pre-launch to post-sales; this enables the handset look and feel to change from a Barbie personality to a BMW one, while enabling a new market of premium downloadable content."

2.2 The Importance of the UIF to the Equipment Manufacturer

With the rapid turnaround of products in the marketplace, one of the emerging challenges facing designers and manufacturers of mobile and consumer electronics devices is that of variant management. That is, how quickly are they able to take one product and use it to create a new one that looks very different.

The purpose of using the current product as a basis for the next product is to minimise time to market and costs by reduction of engineering, QA and other activities in the product development cycle. Existing products are functionally complete and have been through the quality assurance process. Thus the new product can be brought to market more quickly and with minimal risk.

The reason for a very different look to the previous product is so to be seen as an innovator, continuously introducing new products into the market.

Hence it is of enourmous value to the device creator to have available the capability to leverage as much existing software investment as possible and still deliver a fresh product to the market.

A well designed User Interface Personality Framework can provide such a capability.

2.3 Creating a New Mobile or Consumer Eletronics Device

To truly understand the importance of the user interface, one needs to understand the device creation process.

When selecting the software to be used in a new device, the device creator may build the sofware from scratch but is more likely to choose one of the following as a basis:

- Something new that they have not used before but that already exists. This includes licensing a purpose built system such as Windows Mobile, Android, Linux or Symbian. It also includes using Open Source software as a starting point.
- What they used last time. This includes in-house solutions.

In any of the above cases, in order to build long term market success the device creator must retain branding and make the product unique to build a trusting relationship with the end customer.

If using the previous product as a basis, the challenge is to create something that appears fresh to the market. The market frowns upon too many iterations of the same recipe.

The first time a new product family is brought to market a tremendous amount of design, engineering, QA and marketing effort is invested into completing, polishing and commercialising the product.

Reports indicate that bringing a new Android based product to market takes between 2 and 5 man years worth of engineering effort. A fledgling industry based around the effort required in bringing an Android product to market has resulted in an abundance of engineering services companies to do just that. See:

www.mvista.com/press%5Frelease%5Fdetail.php?fid=news/2009/Android-services.html
www.eclaxy.com/Android%5FApplication%5FDevelopment%5FServices.htm
www.intrinsyc.com/os%5Fexpertise/android.aspx
www.teleca.com/Home/expertise%5Fareas/operating%5Fsystems/android/solutions%5Ffor%5Fandroid.aspx
www.embeddedgeneral.com/android.htm

Bringing a new Symbian, Linux or Windows Mobile device to market is similar in terms of engineering effort required.

2.4 The Reality of Developing Software Under Pressure

Ideally, the software team will spend time designing a system that meets not only all of the current requirements, but is also *future proof*. In other words, engineering teams try to design a software architecture that can be re-used for new products, can keep up with market trends in terms of look and feel as well as funcionality, is extensible, portable to new hardware and is easy for the software development team to use and build upon as well as for the user interface design team to modify.

Realistically however, when deadlines loom and the pressure is on to bring a product to market quickly, the usual situation is to cut engineering corners. As the priority is the product currently under development, the first corners to be cut are generally the ones relating to subsequent products. Cutting these corners genuinely reduces not only development time, but also the testing and Q/A cycles.

However it does not take the software past the current product.

3 An Autonomous User Interface

3.1 What is an Autonomous User Interface

A framework that separates presentation from application code is the first step in creating an independant user interface. What is missing is the ability to programatically change the user interface at run time.

FancyPants' Autonomous User Interface lets application developers specify generic or abstract presentation of controls, widgets and even content, giving downstream channel partners the freedom to brand and customise.

For example, an OEM supplied SMS application might ship with a straightforward display of messages and addresses. Using FancyPants, an operator could subsequently enhance addressee information with status and location based data supplied by its network, or a third party ISV could offer and alternate look-and-feel to that same SMS client as well as other FancyPants-enabled application code.

3.2 Removing the Risk in Developing New Devices

An Autonomous User Interface solves the device creator's problem of successfully using an existing product as a basis for a new product.

FancyPants lets developers, integrators and other ecosystem partners completely control and customize the look and feel of the end user experience independently to the application code.

Multiple user interfaces can be developed in parallel to the applications, allowing the same application suite to be used for multiple products in a family or for product iterations.

The user interface can be programmed to be enabled or disabled or re-arranged based on events, messages, time of day, temperature, speed, position, direction or any other input.

Since the user interface itself can be programmed, it can change gradually, or completely on receipt of, or lack of, information.

For example a high end product and a low end product can contain the same applications but have totally different user interfaces.

The benefits to the device creator are clear:

- Time saving by way of diminished engineering requirements
- Time saving by way of diminished Q/A requirements
- High degree of confidence in application performance and market acceptance
- Saving in education of Sales and Marketing forces
- Ability to launch percieved new products to the market rapidly

3.3 Enabling a New Market of Premium Downloadable Content

An Autonomous User Interface opens a new market of premium downloadable content.

In the same way that ringtones are deliered to a mobile phone, an entire user interface can be delivered to a FancyPants enabled application or family of applications.

Not only can this breathe new life into existing applications, the programmable nature of the FancyPants user interface means new services and capabilities can be incorporated as they become available.

4 Conclusion

Selling exactly the same goods as your market peers leaves you to compete on price alone. Price based competition compresses gross margins and severly impacts the bottom line.

Creating and marketing unique and compelling products requires investment at all levels: engineering, QA, marketing and channel. The returns are the lifeblood of the business: market share, premium and profit.

FancyPants unique Autonomous User Interface allows customisation and branding at each point in the value chain; from OEM and ODM to operator, ecosystem partner and ISV. FancyPants also opens the door to new premium content download services.