Avoiding Internet Soup

One of T-Mobile's core brand values is "refreshing simplicity". Under the perspective of the Mobile Web Initiative we regard this as a challenge to produce a more predictably usable mobile internet user experience for our customers.

T-Mobile provides open internet access to mobile users in Europe. However, simply being able to access the internet with a given device does not mean that quality content and services are available. Therefore we chose to supply a specifically adapted portal containing common services such as email, downloadable content and news and information from partners ranging from T-Online to the Financial Times, through eBay and Playboy.

We designed the portal offering as "thin" – T-Mobile mainly provides the linking and enhancing or transactional services such as payment and location information, and original content is mostly generated by our partners on their own servers.

Any approach to the usability problem has to be driven by a systematic approach covering the available Internet Technology (in particular the Browsing and Messaging uses cases). This involves large scale initiatives such as:
- the usage of adaptation technology in content creation, management and presentation
- enhancements of standards compliance in devices and the browser market.

Mobile internet use is characterised by a number of constraining factors:
- the physical size and required "compactness" of the device
- the need to balance battery performance and availability of voice with CPU performance and memory configuration
- network performance is variable within a single network (GPRS may be affected by available slots, CSD by line noise)
- an increasingly broad variety of network technologies which provide full handover between different radio network interfaces (GPRS, 3G, WiFi) while Internet protocol sessions can remain fully intact.

We are looking to create a user experience that is well designed and built to the expectation of customers who are using services through a premium access channel - instead of leaving them alone with a broad mix of an unknown quality "internet soup".

Portal Projects

T-Mobile has launched over 200 mobile Internet devices in the four years since commercial Internet services began, starting out with WAP. Experience shows that there is little consistency in device capabilities, mark-up languages and physical characteristics. More recent devices, with standardized operating system environments such as Symbian and PocketPC, complicate matters further by allowing the user to install third-party software.

In order to balance consistency and quality of the user experience with content customization on a device by device basis (or a browser by browser basis) T-Mobile has taken the approach to develop a common presentation layer for the portal, called CAPS (Content Adaptation and Provisioning System).

Here we require our portal and our partners' systems to produce a device-independent mark-up language. The CAPS application, based on a market leading technology platform, converts mark-up into a suitable format for the device. As this technology is closely aligned with the standardization of the Device Independence Working Group we are looking forward to see these development lead to a step by step migration to the DIWG's eventual standards so that standards compliance can be achieved completely.

Realistically this approach will still not assure all partners integrate with the content adaptation platform, due to financial, architectural or legal reasons (it is impossible, for example, to reconcile an end-to-end SSL session with an adapting proxy) and in this instance we take the alternative approach of insisting on standards compliance and encouraging awareness of the requirements of mobile devices.

Expanding Internet Use

It is our strong belief that our users should be able to use services of the Internet far beyond the offerings given in the T-Mobile portal T-Zones. We are convinced that greater choice for mobile use will increase overall uptake of data services, therefore we are committed to expand the range of both what is feasible and what delivers ease of use with a mobile device. We ensure that all appropriate devices are compatible with advanced browsers and take common applications, such as email and messaging, into account for our device purchasing decisions.

Our experience shows, that – even while it has tangible benefits that must be leveraged - there are limits to what can be achieved by bundling an advanced browser with a device. While the availability of an advanced browser certainly does provide big benefits for accessing the Internet, services still far too frequently deliver a frustratingly poor or/and painfully slow user experience. Many layout improving constructs such as tables, frames and dynamic add-on's like Flash or JavaScript do fail to run reliably on mobile devices.

The very fact that advanced browsers allow greater mark-up flexibility unfortunately reduced the amount of care taken to assure standards compliance and led to a broader use of sloppy mark-up – but unlike to desktop browsing this has quite severe consequences for users of devices with radically limited resources: rendering non-deterministic mark-up has a very real impact on CPU, memory and battery life, and also mostly leads to unwanted and costly data overhead on the radio transmission – for customers and operators all alike.

Mobile Web Initiative

T-Mobile's position is, that standardization and the discussion in the W3C Mobile Web initiative can lead to significant improvement in the ability to support common formats for any service. We want our users to actively leverage the existing Internet on the move for their specific needs in a real-life situation. We prefer to support the creation of content before creating it ourselves and to provide tools to use the Internet to the broadest extent.

We seek to identify where requirements that result from the physical limitations of an anytime, anywhere use of a compact personal device through radio connectivity, have been not taken into account or are underrepresented in key standards defining the mobile user experience.

- Elaborate where the Mobile Web can benefit from utilization of device or network related properties such as

  - deciding how to embed enhanced user interaction technology (advanced display technology on small screens, voice, etc.)

  - checking if available energy level is sufficient to sustain a data transmission from start to end

  - switching bandwidth aware services to an enhanced user experience when radio channels that have changed properties such as 3G, WiFi, WiMax or Flash-OFDM can be utilized

- Data reduction in mark-up might result in a close to linear decrease of transmission time and cost

- Cutting protocols roundtrips might enable serious usability improvements for interactive services

We strongly recommend the use and aim to further develop appropriate technologies and open standards for the mobile device, such as XHTML Basic/Mobile Profile, CSS, SVG Tiny, UAprof etc.

To maximize service reach and the stability through a wide variety of devices within our costumer community we are running a content adaptation service that our closely aligned partners are encouraged to use. We are committed to foster and ensure usability across all our branded applications and are convinced that a widespread increase of standards compliance could be helped by this initiative and will ultimately benefit the internet as a whole .

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About T-Mobile

T-Mobile International is one of the world's leading companies in mobile communications. As one of Deutsche Telekom's strategic divisions, T-Mobile concentrates on the most dynamic markets in Europe and the United States.

By Q2 of 2004, almost 103 million people were using the mobile communications services provided by companies in which T-Mobile or Deutsche Telekom have a majority or minority stake, including Austria, Croatia, Czech Republic, Germany, Hungary, Netherlands, Poland, Slovakia, United Kingdom and the United States of America.

It is the first to operate a transatlantic mobile network based on GSM (Global System for Mobile Communications), the world's most successful digital wireless standard. T-Mobile has also always been in the forefront of creating innovative and compelling new services and strongly believes in supporting the modality of being mobile, so that T-Mobile subsidiaries and affiliates were among the first operators worldwide to create integrated offerings of future-oriented technologies like GPRS, UMTS (3G) and W-LAN. T-Mobile multimedia (TM^3) is the integrated approach to offer our customers seamless, user-friendly communications.

We believe that the best possible support for mobility within key standards such as those of the W3C will be greatly beneficial for the mobile community and the internet as a whole, and result in lowering barriers to creating and using new services in the mobile market space.

Overall, we are convinced, that standards compliance with specific support for mobility in requires more attention and is precursor to an accelerated uptake of new digital services in a broad way:

- We expect synergies for all partners by extending services from fixed to mobile internet and vice versa
- We see an opportunity to better target the mobile community for service providers and a richer choice for our customers
- The shortened uptake cycle for new services will be opening up new opportunities for new entrants and for ourselves
- Ultimately, this will support further growth for the Internet and its use

T-Mobile is and remains fully committed to advance the development of open standards and understands standards as important cornerstones to achieve high efficiency and truly interoperable services.