



Mobile Web Insights

October 2010

Recent industry analyst reports predict European mobile internet traffic will grow by a factor of 32 between 2010 and 2015 – driven primarily by the popularity of smartphones and mobile broadband devices (dongles, netbooks and tablets). Analysts predict actual revenues from mobile internet services will grow at a much slower pace.

Demand for high-bandwidth services like video means that operators must balance costly capacity upgrades against consumer backlash from quality-of-service (QoS) issues.

One consequence for operators on both sides of the Atlantic is that their all-you-can-eat, unlimited data plans appear less and less feasible at current market prices. As these tariffs are phased out, users of mobile internet services will need to change their expectations and, in some cases, modify their online behavior. To avoid churn, operators will need to become experts in usage-based tariffs and pricing plans that are better aligned with subscriber needs and network availability.

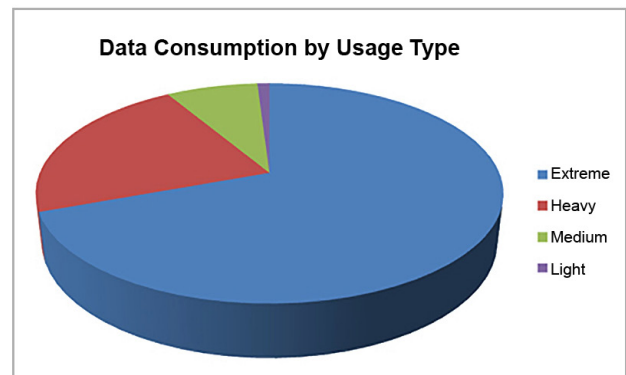
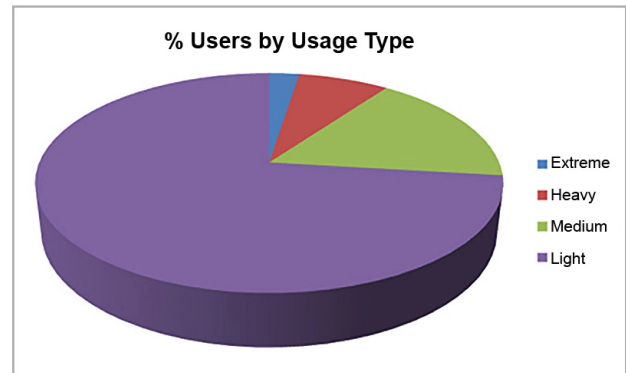
In this edition of *Mobile Web Insights* we show how a tier-one European operator can use Openwave® Analytics to make better sense of the internet traffic flooding its mobile network, which can pave the way for new tiered pricing plans and demand-based tariffs.

Operator Profile

In this report, Operator Y is its country's second largest communications carrier in subscriber numbers. Operator Y provides services to more than 30 million wireless customers and about 20 million wireline customers. In addition to voice service, Operator Y offers mobile internet services through its own news and entertainment portal.

Addressing Disproportionate Usage

Figure 1 shows that 2.5% of users accounts for 70% of data volume on Operator Y's mobile network. These users fit the market segment called Extreme Users: users consuming an average of 50.4MB per day. Extreme Users generate almost three times more data than the segment referred to as Heavy Users, almost nine times more data than Medium Users, and nearly 70 times more data than Light Users.



Data Bucket	Data Consumed/Day	% of Users	% of Data
Extreme	50 MB +	2.50%	69.40%
Heavy	9 MB	7.50%	22.00%
Medium	1.8 MB	16.90%	7.60%
Light	<0.8 MB	73.10%	1.00%

Figure 1: Subscriber classification by data usage

Extreme Users place a huge demand on network resources, resulting in increased costs and an often slower internet experience for other users. Our data show that behind almost every case of extreme usage is an unlimited data plan and a high-end smartphone.

Operator Y can proactively mitigate these problems by using Analytics to extract data directly from the data path and identify subscriber groups by the amount of data consumed, when peak consumption occurs, and then by device, content or application.

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This information can be turned into usage-based classifications and integrated with industry-standard market segmentation information to further enrich the profiles and better match certain segments with the appropriate data plans, as illustrated in Figure 2.

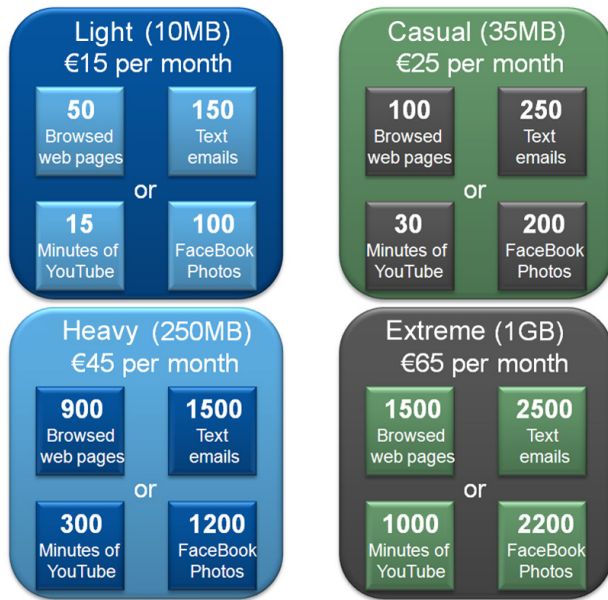


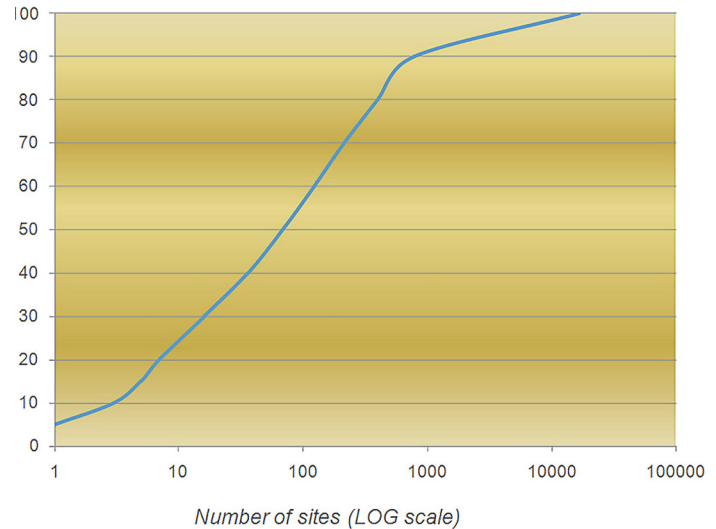
Figure 2: Usage-based plans based on subscriber classifications

Openwave Analytics can also drive usage policies that compress and optimize the data. Network optimization can be built into data plan management. Extreme Users, for example, could be up-sold to “premium” plans with higher quality-of-service (QoS) levels and data allowances. Customer engagements of this sort would be handled with seamless, intuitive notifications that give users full control of their plans.

If at least 30% of Extreme Users sign-up for a premium plan, then Operator Y may start experiencing less network congestion and a healthier bottom line from this costly segment. Operator Y could also offer alternative plans with lower data allowances and QoS levels to those subscribers who do not sign up for the new plans.

Mobile Video and Other Network-Clogging Categories

The proliferation of smartphones has created an insatiable demand for video content, transforming the mobile network into an on-demand video service. Without mediation, the enhanced video capabilities of high-end devices, like preconfigured access to HD video content, will clog existing mobile networks.



Number of sites	% of Data	% of Data	Number of Sites
1	5.4%		
2	8.8%		
3	12.0%		
4	14.4%		
5	16.4%		
6	18.4%		
7	20.3%		
8	21.7%		
9	23.1%		
10	24.4%		
11	25.4%		
12	26.4%		
13	27.4%		
14	28.3%		
15	29.2%		
16	30.0%		
17	30.8%		
18	31.6%		
19	32.3%		
20	32.9%		
21	33.4%		
22	34.0%		
23	34.5%		
24	35.0%		
25	35.5%		
		0	0
		5	1
		10	3
		15	5
		20	7
		30	16
		40	36
		50	69
		60	122
		70	212
		80	393
		90	771
		100	16805

Figure 3: % data by sites

Figure 3 illustrates that three sites contribute 10% of all data on the network. The remaining 90% of the data is generated from the “long tail” of 771 sites. The extraordinarily high traffic volume from these few sites falls into three basic categories: video-on-demand, status updates (from social networking sites) and mobile searches. Similar to the effect of the Extreme Users from the previous section, the three top sites may hinder user experience by reducing the availability of scarce network resources.

Operator Y can use Openwave Analytics to identify the usage patterns causing network congestion and then apply network policies that compress and optimize the data generated from those sites during peak traffic times.

Openwave Analytics also enables operators to enrich the usage profiles with content preferences. These preferences can be used to develop policies for the extreme and heavy usage subscriber bands to optimize the data generated from those sites. As we covered in the previous section, the same technique would create premium plans for users wanting higher QoS.

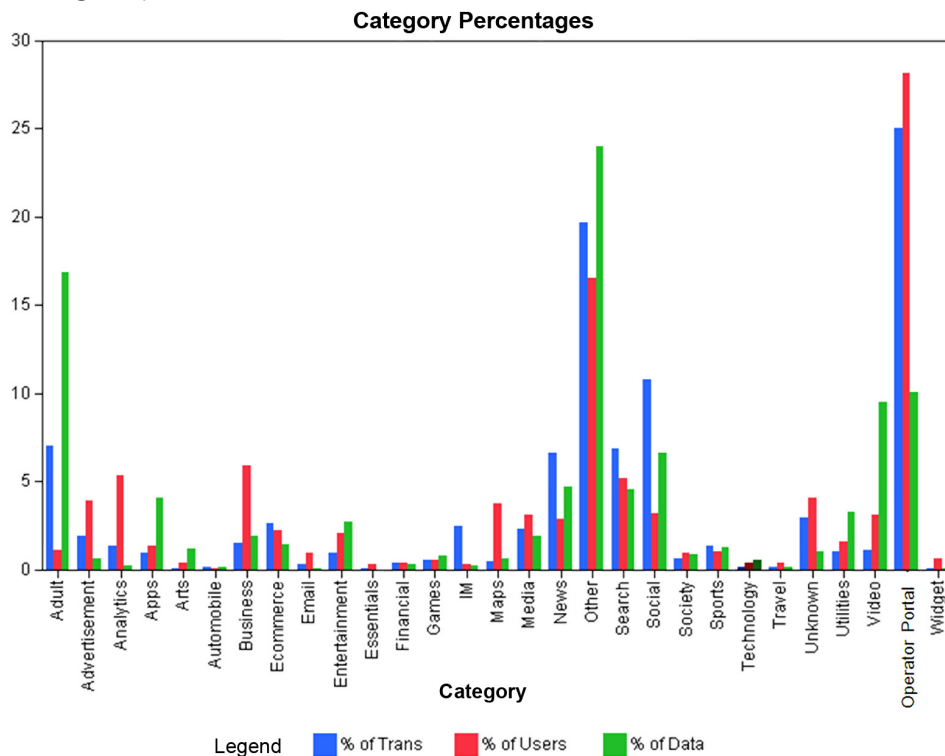


Figure 4: Top categories

The Rise of Over-The-Top Services

Figure 4 shows activity by content category. Operator Y's portal dominates the top category in transactions and users, but the percentage of data traffic is almost three times lower than transactions and users. This difference indicates most subscribers prefer over-the-top (OTT) services outside the operator portal. Services like social networking and search account for an overall increase in mobile internet traffic growth – evidence that Operator Y, like many operators, is losing control of what was once a tightly managed mobile experience (the walled garden).

Perhaps more alarming for Operator Y is that its portal content is losing ground to emerging mobile content categories such as video and adult content – two categories that indicate high levels of data traffic in relation to the number of users accessing those services. With the inevitable migration to smartphones, more users will access these data-intensive

categories, resulting in more network traffic per user (on average) that the operator has less and less control over.

To recapture some of that lost value, Operator Y can rely on Openwave Analytics to cross-reference user segments and content categories to create content-related data plans.

Special Hi-Def premium video plans or social networking plans transform the usual pay-per-bit model into something that conveys far more value to the end user.

Taking a page out of the old voice services playbook, Operator Y can propose offers that would create plans that give price breaks to favorite content categories during off-peak hours.

Further analysis of device type, content, time of day, and other contextual factors can be used to determine the optimal content, device and data allowance mix. This analysis can then be used to create specific tiered price plans (or even build-your-own-plans) based on the behavioral profiles built by the Openwave Analytics system.

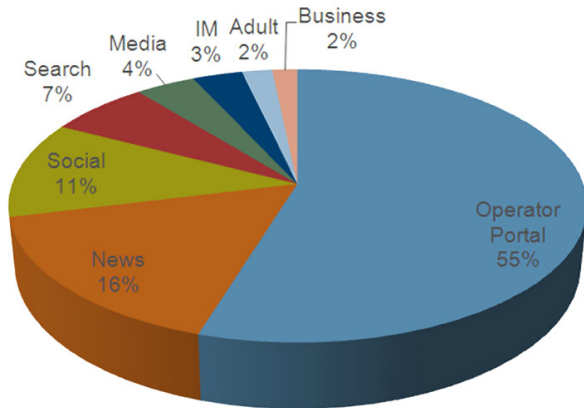
Subscriber-level policies implemented using Openwave Analytics can enable Operator Y to run profitable closed-loop marketing campaigns with tailored data plans based on actual usage information, behavioral profiles and segments. These insights will not only improve Operator Y's ARPU, but also make up the shortfall in lost revenues from on-portal services.

Smart Phones vs. Features Phones

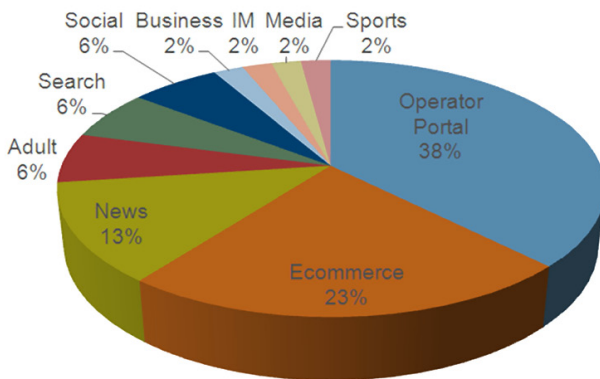
Figure 5 shows that smartphone users on Operator Y's network visit more content categories than feature phone users, specifically e-commerce (23%) and sports (2%) sites, while portal content consumption is 17% lower for these users as compared to feature phone users.

Operator Y can use Openwave Analytics to monitor the behavior of feature phone users and analyze content consumption in relation to smartphone users. Over time, similar analysis has shown an erosion of portal traffic from feature phone users, resulting in lower on-deck portal revenues. Operator Y can use Openwave Analytics to predict when this erosion will begin and proactively create behavioral profiles and link these users to industry standard segments to determine their affinity for new smartphones.

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Feature Phone – Content Consumption



Smart Phone – Content Consumption

Figure 5: Feature phones vs. smartphones

Operator Y can run targeted campaigns to upgrade certain segments of feature phone users to smartphones with personalized data plans. Operator Y can promote different device models based on the users' behavior — for example, high resolution screen models targeted to the burgeoning video users or hi-fidelity headset accessories for the music fans.

Conclusion

From the analyses above, we can see that Analytics is helping Operator Y gain usage insights, create behavioral profiles and segment these profiles based on current and historic data. Armed with predictive models on how subscriber, device, content and network usage will evolve, the operator can proactively plan for high traffic periods optimizing the network for video content while offering subscribers personalized data plans that meet usage requirements and expectations.

Even though Operator Y might face an uphill battle against over-the-top players and new mobile entrants, mobile data traffic will continue to grow at an astounding rate, placing increased demands on network resources. Analytics will help Operator Y keep a close watch on usage trends so that data plans and tariffs can be adjusted to suit the ever-changing needs of subscribers.

Effective monetization of mobile data services requires Analytics-driven network policies to guide the roll-out of usage- and demand-based price plans. We predict that the unlimited plans of the past few years will soon be gone or become one of the most expensive options, worth the cost for only the heaviest data users. Until then, it is important that the shift to tiered plans not damage the subscriber relationship and create churn.



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About Openwave

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