

# Creating Attractive WiFi Areas

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Two years ago, this journal described the situation with WiFi services in Estonia [1], continuing the theme last year [2]. In this article, the authors look at how to create attractive WiFi areas to increase the number of users and the accessibility of WiFi services.

## WIRELESS INTERNET GROWTH

In 2005, there were five WiFi hotspots in Estonia. In January 2006, by comparison, there were more than 700 areas in which high-speed wireless Internet access is provided to the public [3]. These areas are in city squares, hotels, pubs, airports, etc. A similar pace of growth can be seen in Latvia and Lithuania, too. The good news is that the increase in the number of WiFi hotspots in the three Baltic countries shows no sign of slowing down.

It is not remarkable, therefore, that the newsletter of BBC News in the United Kingdom [4] has this to say: "There is a new revolution brewing along Tallinn's ancient stone streets and inside its charming Gothic buildings. but it is not political, it is technological. Wireless net access, or WiFi, is quickly becoming the rule, not the exception. Cafés that offer free Internet access are filled with young professionals checking E-mail, surfing the Web, and designing PowerPoint presentations. This is exactly what WiFi is all about." For many professionals, this has meant that they do not necessarily have to invest in an office – if one has a computer with a wireless card, then one has a place to do one's work.

Many business travellers and foreign journalists who have visited Estonia over the last few years have found that the widespread use of wireless Internet services is one of the things

which most distinguishes Estonia from other countries.

## WIFI AND MONEY

Given that the wireless Internet is everywhere and that the number of users is increasing rapidly, it may come as a surprise to learn that there are hardly any companies in Estonia, Latvia, Lithuania and the rest of the world which have managed to make much money by offering WiFi access.

Almost any new technology involves the success stories of companies which are pioneers in the relevant niche, which have great growth numbers and are then sold for a high price to bigger companies. In terms of wireless Internet access, there are no such companies, and it is hard to imagine that any will emerge in the near future. The truth is that hardly anyone has been able to make money with WiFi services. Even for big ISPs and telecoms firms which offer WiFi for a charge, the process has hardly been profitable.

These are technologies that can be set up easily and cheaply by almost anyone (big ISPs, small café owners, individuals, etc.). It is quite hard to make a log of money with these technologies, so why not offer the services to end users for free or at least for a very nominal fee?

## FREE WIFI

We are, in fact, experiencing a growing trend in many countries –

free or very inexpensive WiFi access in public places such as cafés, restaurants and hotels. One of the very best examples of this phenomenon in the world is Estonia, although it cannot compete with the San Francisco area in the United States. Estonia has 700 WiFi hotspots, and more than 50% offer services to end users completely for free. The rest offer services very cheaply, ranging from EEK 10 to EEK 25 (EUR 0.64-1.60) per 24-hour period.

Nothing in the world, of course, is completely for free. Someone pays for the installation and maintenance of WiFi hotspots. What is the rationale for the relevant businesses to continue to introduce hotspots if it is all but impossible to make money through them.

The fact is that different players have different reasons for doing this. ISPs see this as an extra aspect of high-speed Internet access which they offer. Mobile operators consider WiFi to be a part of the "wireless office" solution. The WiFi hotspots do not necessarily need to make money, their point is to bring in more customers for the relevant company's services.

For owners of small cafés, restaurants, hotels, etc., the reasons are similar – they wish to attract greater numbers of guests. A few years ago a café without printed daily newspapers lost business. Now the same happens to an eatery which doesn't have WiFi access.

## CHALLENGES FOR CAFÉ OWNERS

Even if WiFi services are offered for free, they involve certain challenges, particularly for owners of small restaurants and cafés. WiFi users are usually good clients for a café, because if they own a laptop, that probably means that they are not poor. Some cafés, however, find it a bit difficult to adjust to a situation in which some people spend the entire day in the café, ordering little

distribute information in similar countries, it is hard to attract a country's ongoing attention. Appropriate measures to provide objective information about aspects of the country's activities, its values, and its domestic and international trends must be prepared. Estonia's informational focus on the analysis and distribution of information is important for the world must see a modern country reserved and which note its national tradition and culture.

Information must be available on the Internet, offers the most effective way of presenting actual information. It is assessed from any place. Creating a good environment in the E-environment, in other words, requires attention on expandability of information, although increasing, it is not remarkable, therefore, that the newsletter of BBC News in the United Kingdom [4] has this to say: "There is a new revolution brewing along Tallinn's ancient stone streets and inside its charming Gothic buildings. but it is not political, it is technological. Wireless net access, or WiFi, is quickly becoming the rule, not the exception. Cafés that offer free Internet access are filled with young professionals checking E-mail, surfing the Web, and designing PowerPoint presentations. This is exactly what WiFi is all about." For many professionals, this has meant that they do not necessarily have to invest in an office – if one has a computer with a wireless card, then one has a place to do one's work.

It is not easy for companies to compete in the E-environment in terms of how much information is presented, the fact is that the focus on increasing the availability of electronic content in the world. A general proposal is to be taken by the government so as to facilitate the implementation of various measures related to the dissemination of country-based information and Internet growth.

W. "Beyond the New Territory of the Internet? The Role of ICANN", Panos Panagiotopoulos, No. 1,

or nothing, and just using the wireless Internet. Such clients, of course, are not profitable for a café. During rush hours, when such eateries are full, WiFi users can prevent someone who wants to have lunch from entering in the first place.

Another challenge for small cafés relates to customer support. WiFi services are easy to use, and they are usually quite reliable, but sometimes they break down. Customers ask the person behind the counter about the location of the router or the availability of support, and the person behind the counter often knows nothing at all about WiFi services. In such cases, clients are frustrated with their experience, and the café ends up losing its reputation.

The third and perhaps most important issue has to do with security. There have been cases in which people have used public WiFi hotspots to conduct illegal activities such as hacking, unauthorised entrance into other people's computers, sending spam, etc. When WiFi services are free and widespread, there is no requirement for user identification, and the identity of such people can be difficult for the people to discover. This, in turn, may encourage others to do illegal things via WiFi services. Small cafés which offer free WiFi without identification suffer more, because large ISPs have already take steps to authenticate and identify people who use their hotspots.

### WRONG RESPONSE TO CHALLENGES

It is clear that these challenges require adequate countermeasures. It is necessary to do the right things, but it is also possible to overreact and discourage the use of WiFi services. Extreme measures should be avoided, because they achieve the opposite of the intended goal.

What are some examples of overreacting to the discussed challenges? There is a café in Tallinn,

for instance, which has removed power re-chargers from its walls so as to discourage people from spending too much time in the café. The idea is that if a computer runs on its own battery for two hours, then WiFi users will not be in the café any longer than that. In reality, however, this has caused problems for people who come in for 15 minutes, just want to check their E-mail, and find that their batteries are empty.

When it comes to support and information, some cafés and ISPs have printed instructions which are distributed via the WiFi hotspots. That's a great idea, it's very convenient for users, but no café has managed to come up with additional copies once it runs out of the original supply (something which tends to happen quite quickly).

Enhancing security, of course, is a good idea, but it is easy to overreact by making it so hard to access the Internet that almost no one is prepared to take part in the process. This means a significant drop in usage. If people are required to present an ID and to

state their computer's mac-address, for instance, that can limit usage. So can a requirement that people establish a VPN connection before they can use the WiFi services. So, too, can an attempt to force people to configure IP settings and set up proxies.

The truth is that none of these security features really work, particularly in a competitive environment in which it is easy for someone just to choose another hotspot. No matter what, such rules alienate users.

### RIGHT RESPONSES TO CHALLENGES

So what are the better responses to these challenges? Until recently, there were just a few, and they could only be used by major ISPs. For instance, ISP-provided, fee-based hotspots have a front page which services several purposes. There are instructions on how to use the services, and there is a list of steps to take and phone numbers to ring if there are problems. This can be more effective than handouts, because cafés cannot "run out" of the front pages.



Figure 1. The WiFi front page of the Lõunakeskus shopping centre in Tartu displays instructions to users

ISPs also tend to identifying users – hotspots require user authentication. The important not to make the process difficult. Credit cards are a means of identification in other parts. In Estonia, hotspots use mobile (SMS and voice) authentication, which is probably easier.

Measures such as authentication and authentication are not suitable for small cafés and hotels, because they are complex and costly. ISPs have been eager to share solutions with cafés (via hotspots), mostly for marketing. Often ISP solutions are not flexible to be customized to the needs of a small café.

Things are about to change, however. Several solutions have emerged in the Baltic countries and elsewhere – ones which are easy to manage and use anywhere.

### ATTRACTIVE WiFi

What are some examples of a good WiFi management solution, and what does it offer to cafés? Well, it probably allows a café to offer WiFi users, just like the best way is to use a mobile phone – users can be notified via SMS or make a payment via SMS. Solutions based on credit cards, etc., offer the highest security, but they are more expensive to use, and they also require mobile channels, which have proven to be effective.

This tool alone can do lots of things. It can offer standard payment methods (i.e., EEK 22 for access), while third-party solutions such as Wifigo are customised by each café. A café can offer services for free and require SMS for authentication.

computer's mac-address, that can limit a requirement that they can use the WiFi too, can an attempt to configure IP setup proxies.

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## CHALLENGES

What are the better responses to these challenges? Until now, WiFi has been used by major ISPs. Often ISP solutions are too inflexible to be customised for the needs of a small café. Things are about to change, however. Several third-party solutions have emerged in the Baltic countries and the rest of the world – ones which make it easy to manage a WiFi hotspot anywhere.



Shopping centre in Tartu

ISPs also tend to have ways of identifying users – most of their hotspots require user authentication. The important thing here is not to make the process too difficult. Credit cards are a common means of identification and payment in other parts of the world. In Estonia, hotspots all have mobile (SMS and voice-based) authentication, which is considerably easier.

Measures such as a front page and authentication are unavailable for small cafés, restaurants and hotels, because they are complex and costly. ISPs have not been eager to share their solutions with cafés (with some exceptions, mostly found in Latvia). Often ISP solutions are too inflexible to be customised for the needs of a small café.

Things are about to change, however. Several third-party solutions have emerged in the Baltic countries and the rest of the world – ones which make it easy to manage a WiFi hotspot anywhere.

## ATTRACTIVE WIFI HOTSPOTS

What are some of the features of a good WiFi management solution, and what does this solution offer to cafés? Well, first of all it probably allows a café to identify WiFi users, just like ISPs do. The best way is to use the mobile phone – users can be requested to send an SMS or make a phone call, and then the password is returned via SMS. Solutions which are based on credit cards, ID cards, etc., offer the highest level of security, but they are much too hard to use, and they alienate users. Mobile channels, by comparison, have proven to be effective.

This tool alone allows a café to do lots of things. ISPs offer a very standard payment scheme in all cafés (i.e., EEK 22 for 24 hours of access), while third party solutions such as Wifigate [5] can be customised by each café individually. A café can offer Internet services for free and require only an SMS for authentication. Alternatively,

it can charge money for an hour, a day, a week, etc. The possibilities are limitless.

These tools allow café owners to control the amount of time which people spend there quite easily, as well as to sell more in the way of services. For instance, a customer who buys a cup of coffee could receive one hour of WiFi access in return. Once the time is about to expire, a message pops up on the screen saying that the customer has to buy something else to continue – coffee, perhaps something to eat, etc. Within a minute after the customer clicks on the screen, a waitress brings a fresh cup of coffee along with a new WiFi access code.

The start-up page that is displayed before a user starts to use WiFi used to be the exclusive provenance of ISPs, but now it can be created and customised by anyone. In addition to being a medium for displaying instructions (how to configure the mail server, how to troubleshoot problems, who to ring for client support, etc.), it can also be used to communicate everything that the café wishes to communicate – from special offers to sponsored commercial information.

There is a major shopping centre in Tartu, for instance, which uses the WiFi front page (Figure 1) to direct users to the centre's Web page. There is advertising space for shops and service providers in the shopping centre – an ice rink, for instance. By selling advertising and promoting its own facilities, the centre can offer free WiFi services to its customers and even earn a bit of a profit in doing so.

Another visible trend is the emergence of value-added services which are linked to WiFi in a specific location. Some cafés, for instance, offer their clients a chance to read the online version of the business daily *Äripäev* for free – something that is usually available only to the newspaper's own subscribers. Such value added services are useful for both

parties, and they make WiFi connections more attractive and profitable for eateries.

## THE FUTURE

WiFi is a tool, not an end in and of itself. More important than the WiFi connection as such are the things which people can do with the help of the wireless Internet. The great thing about WiFi is that it enables additional services for owners of cafés and restaurants. They can now experiment with these things so as to distinguish themselves among their competitors.

The WiFi business can be run by Internet service providers or by merchants who purchase the equipment from an ISP. The business is much more likely to succeed, however, if the ISP and merchant work together. If WiFi solutions which an ISP provides at a commercial hotspot are not sufficiently flexible and oriented toward merchants, then merchants will find ways of bypassing the ISP altogether.

It is clear that free WiFi hotspots which have no identification or start page don't have much of a future at all. Neither do inflexible solutions that are offered by ISPs without taking the interests of merchants into consideration. There is a future only for flexible solutions which can be customised by merchants and which enable value-added and merchant-specific aspects of WiFi. □

## REFERENCES

1. Haamer, V. "WiFi in Estonia: The Current Situation", *Baltic IT&T Review*, No. 3(34), 2004.
2. Haamer, V. "WiFi Services at Baltic Petrol Stations", *Baltic IT&T Review*, No. 2(37), 2005.
3. Statistics from <http://www.wifi.ee>.
4. Boyd, C. "Estonia Embraces Web Without Wires", BBC News: <http://news.bbc.co.uk/1/hi/technology/3673619.stm>.
5. See, e.g., <http://wifigate.mobi.ee>.