

.eu Insights

Website usage trends among top-level domains 2014

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EURid

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.eu Insights

The EURid Insights series aims to analyse specific aspects of the domain name environment. The reports are based on surveys, studies and research conducted by EURid in cooperation with industry experts and sector leaders.



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1 Executive Summary


For the fourth time, EURid, together with the Leuven Statistics Research Centre, has investigated the websites behind some of the most popular top-level domains. This report focuses on three questions:

- 1. What is the most common usage of websites?**
- 2. Is there a difference in how different top-level domains are used?**
- 3. Has the way websites are used changed over time?**

To answer these questions EURid, the registry for the .eu top-level domain, carried out an extensive categorisation exercise in 2013, classifying the websites of eight different top-level domains (TLDs) into eight categories.

The report shows that the most common use of a domain name is to link to a website used for business purposes. 30.5% of the categorised domain names linked to a business website. Other categories with a large percentage of websites were: holding page (27.8%), error (16.2%) and pay-per-click (12.9%). Relatively few sites (9.3%) were used as personal websites and the percentages for the password-protected, institutional and adult-content categories were almost negligible.

The biggest change over time is a significant drop in the percentage of pay-per-click (PPC) sites and a corresponding increase in holding pages as well as a small increase in content-based sites. This indicates that PPC revenues are dropping and that people are responding either by linking their domain names to holding pages or, in some cases, by building websites with actual content.



Comparing different TLDs, the report concludes that several have distinct profiles. The main example is .org, which has a very high percentage of personal websites. Other examples are .eu, which has a distinct business profile, and .info and .mobi which have a high percentage of holding pages.

Interestingly, given the upcoming launch of new TLDs, there is a clear trend among the gTLDs. As expected, those launched more recently (.biz, .pro, .info and .mobi) have a much higher percentage of sites that are not content-based (error, holding or pay-per-click) than the older, more established ones (.net, .org and .com). Compared with last year the difference has decreased somewhat though. However, .eu does not follow the trend, although it is a relatively new TLD, it has (along with .com) the highest percentage of content-based sites among all the investigated TLDs.

This is the fourth year that EURid has conducted such an exercise. It is the most comprehensive manual research into TLD usage of which we are aware.

2 Introduction

Simply put, domain names, or more specifically, their corresponding web addresses are important because they give browsers an easy way to find the IP address of a website. IP addresses, complex sets of numbers allocated to each and every machine connected to the Internet, are necessary to contact the web servers that serve up the pages of a website. Domain names have proved so useful that today there is hardly a business, government body or institution that doesn't have a web address which it advertises at every opportunity.

When the DNS was introduced, a number of so-called generic top-level domains (gTLDs) were created so people or businesses that had IP addresses could associate them with an easy to remember domain name. The idea was that each gTLD would cater to a certain audience. .com would be for commercial companies, .net would be for network providers and .org for organisations and institutions. In addition, a number of country code top-level domains (ccTLDs) were delegated, each corresponding to a specific country, for example, .de for Germany and .uk for the United Kingdom.

Since then additional top-level domains have been introduced throughout the years, both in the gTLD and ccTLD space, such as .info for informative sites, .pro for professionals, .mobi, for mobile websites, .biz as an alternative to .com and .eu for residents of the European Union (EU). More recently the creation of even more top-level domains has been approved with the aim of offering the Internet user more choice and further expanding the domain name market.

In this ever-evolving market context it might be interesting to find out:

- What is the most common usage of websites linked to domain names?
- Is there a difference in how different top-level domains are used?
- Has the way websites are used changed over time?

To answer these questions, EURid, the registry for the .eu TLD, conducted an extensive manual categorisation exercise in 2013 in which it analysed eight TLDs. The TLDs analysed were:

- Three of the original gTLDs: .com, .net and .org
- Four of the new gTLDs: .biz, .info, .pro and .mobi
- One relatively recent ccTLD: .eu.



3 Usage categories

Most website usage categories are unchanged from those defined in the previous report. The categories were selected according to the type of information that EURid wanted to gather from this exercise:

- **Business:** a website that clearly shows commercial activity and that is designed for customer interaction. Business websites provide information about the company, including contact details, company structure and descriptions of products or services. Some also allow customers to shop online.
- **Community:** a website that clearly contains information about a community, club, association or religious institution. Personal websites contain information about an individual, family or political candidate. Although community and personal websites might contain promotional material, such as merchandising, they do not have a commercial purpose.
- **Pay-per-click (PPC):** a website that mainly contains advertising links. Advertisers only pay when a user clicks on an advert or link.
- **Holding page:** a website typically consisting of a single page that acts as a placeholder for a future website. Holding pages can have different formats:
 - **Corporate holding page:** a page with no information or only the company contact details. The page might indicate that more information will be published in due time. Note, if the page contained enough information about the company, its products and contact details, it was categorised as a business website.
 - **Under construction:** a page that tells the visitor that the website will be available soon.
 - **Hosting company page:** a page set up by a hosting company, often by default, when a customer has registered a domain name but not yet linked it to a website. If the holding page only contained pay-per-click links, it was categorised a PPC.
- **Institutional:** a website that belongs to a government, government-related or government-sponsored institution, such as a city, museum, public school or university.
- **Password protected:** a website whose content can only be accessed once a password has been entered.
- **Error:** websites displaying an error message. Although the domain name was found in the zone file, it was either configured incorrectly or not configured at all and therefore it did not resolve to a “www”.
- **Adult content:** a website displaying adult content.

Since the categories business, institutional, password protected and adult all indicate by their nature that the owner has built a website that contains actual content, we have grouped them together in some parts of the text as “content-based” websites. Likewise the categories error, holding page and PPC are grouped into a “non-content-based” category.

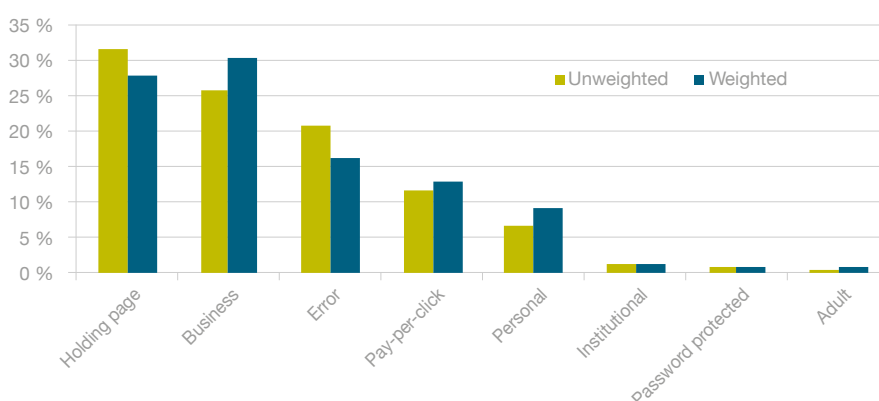
Similar categorisation exercises are frequently carried out automatically. But an automatic categorisation often differs significantly from a manual categorisation, which will also be illustrated here. More information about the methodology used in this categorisation exercise can be found in the methodology section at the end of this report.

4 Results

4.1 Overall categorisation results

The overall results for all eight categories, based on a sample of 49 000 websites randomly selected across eight TLDs, are illustrated in Figure 1 (green bars). Giving each TLD equal weight does not accurately reflect the Internet since users will visit vastly more .com sites than .pro sites. To get a more realistic picture of typical websites we also calculated the average, weighting each TLD by size. The weighted averages are given in blue.

Figure 1 – Average usage per category, across all eight TLDs



Using the weighted average, almost a third (30.5%) of the analysed websites were used as business pages, followed by holding pages (27.8%) and websites that could not resolve and resulted in error pages (16.2%). PPC, personal and institutional websites comprised 12.9%, 9.3% and 1.2% of the analysed websites, respectively. Adult websites are the least common, making up less than 1% of the websites. Using unweighted average gives a somewhat different picture with fewer business and personal websites and more holding and error pages.

Looking at the results for each TLD shows significant difference between TLDs, with many of them having a distinct personality.¹ Two TLDs, .eu and .com, have business as the largest category and thus a distinct business profile, while in the other six the largest category is holding page. Least popular with businesses are .org and .mobi. .eu and .org stand out as having a higher percentage of institutional sites (4.1% and 5.3%, respectively), while .org has by far the most personal sites (18.1%).

If we add the business, personal, institutional, password-protected and adult categories together into a single category representing content-based websites there is a clear pattern of old versus new TLDs. The newer TLDs (.biz, .pro, .info and .mobi) have a lower percentage of built up websites. The exception here is .eu, which has a high percentage content-based websites even though it is one of the newer TLDs. The results are summarised in Figure 2.

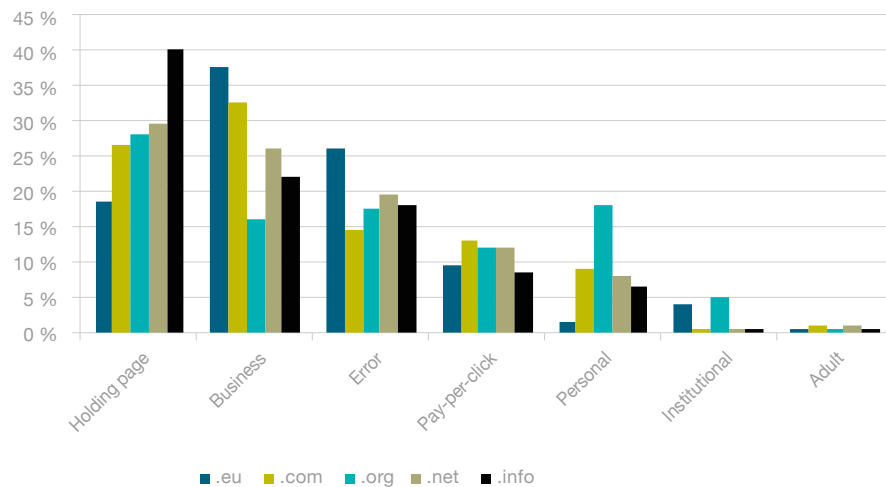
Figure 2 – Domain name use per TLD

	.eu	.com	.org	.net	.biz	.pro	.info	.mobi	Average	Weighted Average
Holding page	18.9%	26.8%	28.2%	29.7%	32.0%	30.2%	40.4%	45.6%	31.5%	27.8%
Business	37.8%	32.8%	16.3%	26.5%	27.8%	25.3%	22.3%	16.2%	25.6%	30.5%
Error	26.6%	14.9%	17.8%	19.8%	22.1%	21.5%	18.3%	25.0%	20.7%	16.2%
Pay-per-click	9.6%	13.3%	12.4%	12.4%	12.3%	16.3%	9.0%	8.9%	11.8%	12.9%
Personal	1.9%	9.2%	18.1%	8.3%	3.6%	4.3%	7.0%	2.5%	6.9%	9.3%
Institutional	4.1%	0.9%	5.3%	0.9%	0.5%	0.3%	0.6%	0.2%	1.6%	1.2%
Password protected	0.9%	1.0%	1.3%	1.3%	1.1%	1.3%	1.6%	1.0%	1.2%	1.1%
Adult	0.2%	1.0%	0.6%	1.0%	0.6%	0.8%	0.7%	0.5%	0.7%	0.9%
Content-based	44.9%	44.9%	41.6%	38.0%	33.6%	32.0%	32.3%	20.5%	36.0%	43.1%
Non-content-based	55.1%	55.1%	58.4%	62.0%	66.4%	68.0%	67.7%	79.5%	64.0%	56.9%

¹ Statistical analysis carried out at the University of Leuven shows that there is significant association between category and TLD (P-value <0.0001).

The results are also illustrated in Figure 3 where, for visual clarity, the password-protected category and three of the smaller TLDs have been excluded. As mentioned previously, .eu has a strong business profile but also a much higher than average percentage of institutional websites. On the other hand, few people use .eu for personal websites. .eu has a large percentage of error sites but a correspondingly low percentage of holding and PPC sites. Among the other TLDs, .com also has a strong business profile. .org has many institutional and personal sites but relatively few business sites. .info has a lot of holding pages, while .net websites are close to average among all categories.

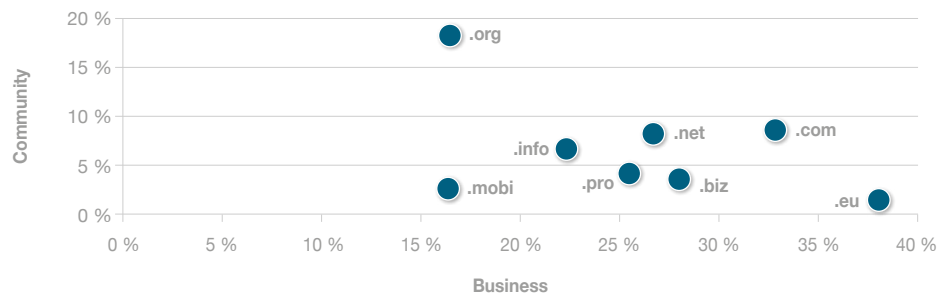
Figure 3 – Distribution of websites across categories by percentage for five TLDs



4.2 TLD clustering

The categorisation exercise also examined patterns in the data to establish which TLDs resemble each other. For example, whether more established TLDs, such as .org, .com and .net, are used differently to the newer TLDs, such as .mobi, .info, .biz, .pro and .eu. In Figure 4, the percentage of business websites for each TLD was plotted against the percentage of personal websites. The results show the clear personal profile of .org and the business profile of .eu. There is no obvious grouping of long-established TLDs versus new TLDs, .info, .net, .pro and .biz are clustered closely together. .mobi stands out as having a low percentage in both categories.

Figure 4 – TLD clustering based on fraction of business versus community for all eight TLDs



Another way of establishing similarities between different TLDs is via the correlation coefficient. Figure 5 displays a table of values between 0 and 1. Each value indicates to what extent the two variables, in this case two TLDs, correlate. A value of 1 means that the two TLDs are used for exactly the same purposes, a value of zero that they are completely independent of each other. Values highlighted in green show a strong correlation while those highlighted in blue show a weak correlation.

.eu stands out as having a quite distinct profile. The two TLDs most different from each other are .eu and .org, with the strong business profile of .eu contrasting with the personal profile of .org. Another group is formed by .pro, .biz and .net which have a very similar profile.

Figure 5 – Correlation between TLDs

	.com	.org	.net	.biz	.pro	.info	.mobi
.eu	0.88	0.59	0.86	0.88	0.85	0.70	0.63
.com		0.79	0.96	0.94	0.93	0.87	0.75
.org			0.88	0.82	0.83	0.89	0.84
.net				0.99	0.98	0.95	0.89
.biz					0.99	0.95	0.91
.pro						0.93	0.89
.info							0.97

Another way of visualising the “personality” of each TLD is through correspondence analysis. Using this technique, we plotted the similarity of TLDs against the categories to which they most strongly relate. The technique allows a data set to be displayed in a two-dimensional graph, displayed in Figure 6. The graph should be viewed as two sets of different, overlaid plots, one showing the categories, in green, and one displaying the TLDs, in blue. The closer two points are to each other, the more the categories and TLDs bear a resemblance.²

Figure 6 shows one cluster with four TLDs (.biz, .net, .pro, .com) at the centre of the graph. These are then “standard” TLDs that are not used for a specific purpose. Another cluster is formed by .mobi and .info, each with a strong holding page profile. .org is off to one side with its strong personal profile and .eu off to another side with its strong business profile.

Figure 6 – Correspondence analysis



² The portion of total inertia explained by the first two dimensions is already 87% which is very good.

4.3 Significance analysis

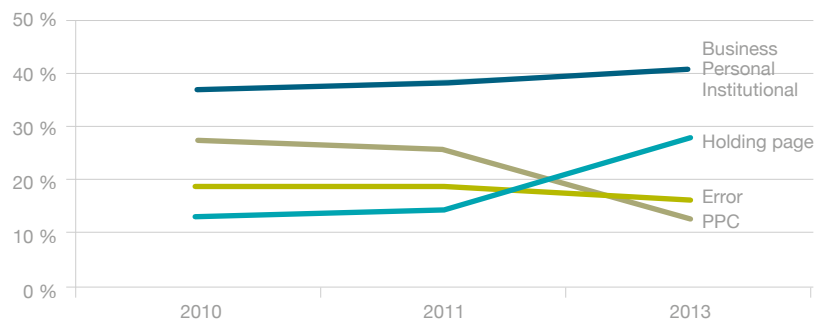
Statistical analysis carried out by the University of Leuven shows that the following TLDs and categories are statistically significantly associated:

- There are relatively more Business websites in .eu.
- There are relatively more Holding pages in .info.
- There are relatively more Personal pages in .org.
- There are relatively fewer Holding pages in.eu.
- There are relatively more Holding pages in .mobi.
- There are relatively fewer Personal pages in .eu.

4.4 Comparison with previous years

Compared with previous years, the most obvious trend (Figure 7) is a decrease in the percentage of PPC sites (23.9% in 2010, 20.6% in 2011 and 11.8% in 2013) and a corresponding increase in the percentage of holding sites (18.7% in 2010, 20.4% in 2011 and 31.5% in 2013). These categories are to some extent complimentary since they indicate that the owner has not yet decided what to do with the domain name or is planning to sell it. That PPC is becoming less popular indicates that revenues from PPC are falling. Not all PPC sites are replaced with holding sites though, there is also a gradual increase in the percentage of content-based sites (business, personal and institutional).

Figure 7 – Comparison with previous years, weighted average




4.5 Redirects

In the study the websites were categorised according to their landing page regardless of whether the visitor was redirected or not. To measure the percentage of sites that automatically redirected to another TLD we carried out an automatic categorisation covering the entire zone files of .pro and .eu and a random sample of 1 million domain names in the other TLDs. The results are shown below in Figure 8. Across all investigated TLDs, on average 19.5% of the domain names redirect to another site. Comparing where the different TLDs are redirected reveals certain trends:

- The most common is to redirect to a .com website.
- The second most common is to redirect within the same TLD. For two of the eight TLDs (.pro and .org) this was the most common.
- .eu stands out as having a large percentage of the redirects to ccTLDs, especially .de.

Figure 8 – Redirects

		Redirecting								
Redirecting to		.com	.biz	.net	.mobi	.info	.org	.eu	.pro	Total
	Total	18.2%	20.0%	17.6%	17.5%	17.5%	19.8%	25.5%	20.2%	19.5%
	.com	15.3%	9.2%	8.3%	8.1%	7.4%	7.4%	5.8%	3.8%	8.2%
	.net	0.6%	1.7%	6.0%	1.4%	1.0%	1.0%	1.8%	2.2%	2.0%
	.org	0.3%	0.4%	0.7%	0.4%	0.6%	8.7%	0.3%	0.1%	1.5%
	.pro	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	11.0%	1.4%
	.de	0.4%	1.3%	0.7%	0.7%	1.6%	0.8%	4.6%	0.2%	1.3%
	.eu	0.0%	0.1%	0.1%	0.0%	0.1%	0.1%	5.1%	0.1%	0.7%
	.info	0.0%	0.1%	0.1%	0.1%	4.5%	0.1%	0.1%	0.1%	0.6%
	.biz	0.0%	4.1%	0.0%	0.0%	0.1%	0.0%	0.1%	0.1%	0.5%
	.mobi	0.0%	0.0%	0.0%	3.8%	0.0%	0.0%	0.0%	0.0%	0.5%
	.fr	0.1%	0.2%	0.2%	0.1%	0.2%	0.2%	0.7%	0.7%	0.3%
.uk	0.3%	0.4%	0.2%	0.3%	0.3%	0.3%	0.6%	0.1%	0.3%	
.nl	0.1%	0.1%	0.1%	0.1%	0.2%	0.1%	1.5%	0.1%	0.3%	



Compared with 2011 the percentage of redirected .eu sites was roughly the same but there has been a dramatic change in the TLDs to which they were redirected. In 2011 redirects to .com made up 30% of all redirects while only 5% of the redirects were to another .eu site. In contrast, in 2013, while redirects to .com were still the most common (23%), 20% of all .eu redirects now pointed to another .eu site, indicating that .eu is increasingly used as the main domain name for Internet sites.

5 Conclusions

The main finding of this report is a significant drop in the percentage of pay-per-click sites. This indicates that PPC revenues are dropping and that people are responding by linking their domain names to holding pages or, in some cases, by building actual websites.

The report also shows that the most common use of a domain name is to link to a website used for business purposes. 30.5% of the categorised domain names linked to a business website. Other categories with a large percentage of websites were: holding page (27.8%), error (16.2%) and pay-per-click (12.9%). Relatively few sites (9.3%) were used as personal websites and the percentages for the password-protected, institutional and adult-content categories were almost negligible.

The report concludes that several top-level domains have distinct profiles. The main example is .org, which has a very high percentage of personal websites. Another example is .eu which has a distinct business profile. The report also identifies an interesting difference between the established and the newer TLDs. The more recently launched TLDs (.biz, .pro, .info and .mobi) have a much higher percentage of sites that are non-content-based (error, holding and pay-per-click) than the older, more established ones (.net, .org and .com). However, .eu does not follow the trend, although it is a relatively new TLD it has (along with .com) the highest percentage of content-based sites among all the investigated TLDs.



6 Methodology

The domain names used in this exercise were taken from the zone files of the eight studied TLDs. From these zone files, a random sample was generated which was then assessed by a multilingual team of researchers. In total, around 5 000 domain names were assessed for each TLD. This method does not take into account domain names that were registered without configuring name servers (so-called “parked” domain names), which is typical of defensive registrations. Please note that in some TLDs, parked domain names are not allowed. In that case the domain name is often linked to a holding page to circumvent this limitation. When a website was automatically redirected to a website with the same or a different extension, the website of the original extension was categorised according to the category of the website to which it was redirected.

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About EURid

EURid is the not-for-profit operator of the .eu top-level domain. Set up in 2003, EURid started general registration of .eu domain names in April 2006. More than 3.5 million domain names have been registered to date. To find out more about .eu and EURid, please go to www.eurid.eu. You can contact us directly in any official EU language by email to info@eurid.eu.

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