The surfing patterns of WAP portals reflect the same strong regularities found in Web surfing; the Universal Law of Web Surfing is also the Universal Law of Mobile Web Surfing.

the structure of the Web and its usage patterns. For example, [2] found that, though the Web remains essentially uncontrolled and dynamic, it reflects well-defined large-scale properties. For example, it is characterized by scale-free link distribution, and its highly connected structure results in a surprisingly small "diameter" (approximately 19 links or clicks), thereby limiting the click-distance between isolated information sources to just a few clicks.

Web pages were shown in [6] to be distributed among sites according to a universal power law, meaning that many sites have only a few pages, while a few have hundreds of thousands of pages. The Web, according to [1], is an example of a small-world network (see [12]) and how this property is leveraged by search engines. Indeed, many of these properties are exploited by Google and other global search engines [4, 12].

In addition to these topological characteristics of the Web, fundamental usage properties govern the way Web users access information. For example, [7] found that Web-user surfing patterns reflect strong statistical regularities that can be described through a universal power law that explains the Zipf-like distributions in page hits commonly observed at Web sites. These regularities have been characterized by an inverse Gaussian distribution of surfing behavior that helps determine the probability a user will click through a succession of pages (search to a given depth) in a given surfing session. This analysis shows that most users are likely to have only very short sessions in terms of the number of links they select, that most users select only two or three links in a session, and that few users are likely to surf any deeper than these few links.

A key question is whether these regularities also exist in mobile Web usage, in light of the fundamental differences with respect to devices, content, and infrastructure. Here, we focus on the surfing behavior of mobile Web users by analyzing a large corpus of surfing data (more than 3.75 million sessions by almost 421,000 users in a large European mobile portal). Worth noting is that previous analysis (such as [7]) of Web searching often relied on much smaller samples of usage data involving at most thousands of users.

Following the methodology of [7], we start by deriving the probability, $P(L)$, that a user will select L links in a WAP portal. We assume that each visited portal page (initial page) holds some value for the user and that by clicking on a link from that page, the user proceeds to another page (the next page) that also holds some value for the user. The value of the next page is in some way related to the value of the initial page; that is, the value of the next page V_L is the value of the previous (initial) one V_{L-1} plus or minus a random term, as in

$$V_L := V_{L-1} + \varepsilon_L \quad (1)$$

where the values ϵ_L are independent and identically distributed Gaussian random variables. A particular sequence of page valuations is the realization of a random process and is thus different for each user. Within this formulation, an individual surfs until the expected cost of continuing is perceived to be greater than the discounted expected value of the information that might be found in the future. This trade-off can be thought of as similar to an option in financial markets for which it is well known that a threshold value exists for exercising the option [5]. Even if the current