

# LIVES AND DEATHS OF CYBERCAFÉS: MOBILE INTERNET TO BLAME

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## ABSTRACT

This study sought to undertake a statistical and computational study of the factors behind the drastic fall in the number of patrons frequenting Internet cafés. The study used data gathered from business owners of selected cafés in Ghana, a typical Third World country, where infrastructure deficit meant the broader majority used Internet services such as surfing the Web and accessing e-mails until very recently, mainly at cafés. Likewise, people using smartphones to access the Internet were also interviewed to obtain their views on the Internet usage patterns. The principal finding of the study was that most patrons of Internet cafés now prefer to do that on their smartphones mainly because it is cheaper and more convenient and also because of security concerns they attached to their data being intercepted by would-be criminals also patronizing cafés. Additionally, patrons complained of usually very old desktop computers at cafés badly infected with viruses that often infected and destroyed their files.

**Keywords:** Internet café, Ghana, smartphone, cyber crime, mobile Internet service

## INTRODUCTION

The concept of the Internet café with full Internet access was invented by Ivan Pope in early 1994 (Internet Café, [https://en.wikipedia.org/wiki/Internet\\_cafe](https://en.wikipedia.org/wiki/Internet_cafe)) and subsequently, the concept was replicated in many developed countries. However, with time, many cafés have folded up in these developed countries because the cost of personal affordability is not very much and so people have been able to subscribe to Internet services on their own rather than paying a time-based fee at a café. However, the concept is still very much in vogue in developing countries because in these places, it is usually more cost-effective using the services of a café rather than paying an Internet service provider for one's personal service at home.

According to [www.BusinessDictionary.com](http://www.BusinessDictionary.com), a cybercafé or Internet café is a roadside business place where customers can surf the Internet on payment of a time-based fee. In the past, most people who wanted to access the Internet mainly did so at these business outlets. This was because they could not afford to subscribe to the service in their homes since in comparison to using the facilities at a café, it was more expensive to have it at home on your desktop or laptop. Besides, the technology was just not there to have Internet service installed at one's home. Thus cybercafés were very popular and prosaic in the early days especially in big cities where infrastructure availability was relatively better as against rural or small towns. It was not uncommon in the early days to see tall masts and parabolic satellite dishes sprung around the major cities of say a country

like Ghana just for the purpose of offering Internet services. I recount my own experience of always looking forward to visiting the nearest Internet café so as to link up with the World in a way that even satellite television was unable to do. This scenario was particularly common in almost all less developed countries where the infrastructure deficit is very deep and unending. On the contrary, in most developed countries, Internet cafés were just a blip in history as most people soon had relatively satisfactory Internet services in the cozy privacy of their individual homes.

Down memory lane, one can recall about three decades ago when the Internet first made its long expected stop in Africa, the continent at the bottom of the log as regards Internet penetration. In those early days, it was viewed as a facility only meant for the privileged in society because they alone could afford it. This famous technological invention fathered by Vinton Cerf and Bob Kahn, was a marvel to behold by every stretch of the imagination (Leiner et al, 1997). Even then, one could only access it through the use of a landline telephone (dial-up) because the infrastructure for broadband services were just unavailable. Thus in those days, the speed of download was extremely painfully slow — in fact, the bandwidth of landlines is about 3 kHz— especially for large files and also was an inconvenience any time one needed to make a voice call because then the Internet service will cut off suddenly because a voice call was coming through.

Fast forward a few years and the technological advancements have so overwhelmed all such that Internet access is now almost possible in every nook and cranny. However, the singular factor responsible for all this transformation is mobile Internet via the smartphone. Today Internet services are available as broadband services through either wireless connection or cable connection (<https://www.modernghana.com/news/451810/1/icann-president-announces-major-expansion-in-afric.html>). Furthermore, there are IP phones today which also utilize a part of the broadband spectrum for voice conversations whilst the bigger chunk of the spectrum is used for data services. Even semi-literate people are able to tackle the Internet such as using Google to conduct a search on the Web.

The platform or outlet for accessing the Internet however, has shifted massively onto personal phones rather than an Internet café. In fact, ever since smartphones became so rife in the last few years— about five years ago— the business returns of Internet cafés have dwindled massively as a result. This is simply down to the fact that smartphones come in ranges of all sizes and thus people who can afford them are able to do everything they would normally do on a computer in a café using the data services of their network providers. In fact, this situation is worldwide and even in Myanmar where mobile penetration is a

mere 4 %, cybercafés have also reported a massive drop in the number of patrons. According to most people who used to surf the Web at Internet cafés and have now opted for mobile Web services, using their smartphones to browse the Internet is far more convenient and cheaper compared to the use of an Internet café (Odlyzko, 2001). Again, for reasons of security (Rantala, 2008; Detica, 2011; Rushe, 2011; Comprehensive Study on Cybercrime, UN, 2013), most previous café patrons prefer the use of their smartphones to do the very same things they have always done at cafés (EUROPOL, 2011; Speer, 2000). Another reason advanced by most former patrons of Internet cafés are that most of the desktop computers used in these cafés are very old and outmoded and most of them are severely infected with viruses and also are extremely very low on RAM capacity. Another key factor accounting for the dwindling fortunes of cybercafés is the unreliability of their networks. It is usually not uncommon to suddenly experience network downturn whilst in the middle of a serious work in a typical café due to a problem emanating from the ISP which supplies Internet connectivity to that particular café. In fact, this type of problem is so common that most patrons sometimes end up losing money during these spells of intermittence and are generally not reimbursed.

On the contrary, Internet cafés have survived at least to this end in spite of their declining businesses because there are still some basic tasks that cannot be accomplished using a smartphone. Tasks such as scanning, and printing of a document, at least still make such business outlets still relevant.

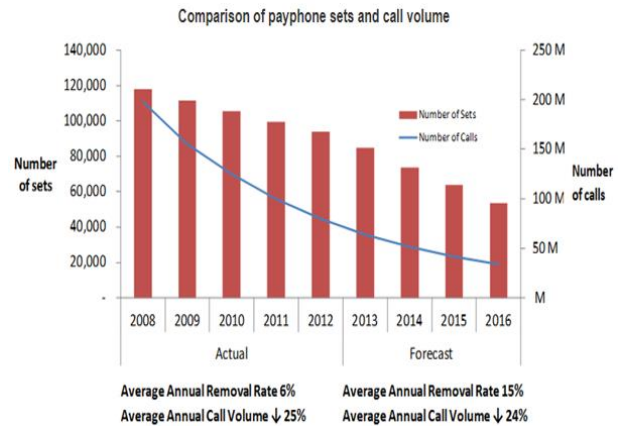
It has to be emphasized that during the boom of Internet cafés, just like the dotcom boom era, major organizations called Internet Service Providers (ISPs) were central to everything. In Ghana, West Africa, for example, most of these organization are still present although, they have had to diversify their businesses in order not to be forced to close shop. There is the association called Ghana Internet Service Providers Association (GISPA). The key members of this association are:

1. AfricaOnline Ghana Limited
2. ComSys Ghana Limited
3. Main One Cable Company
4. Network Computer Systems (NCS) Limited
5. TeleData ICT Limited
6. Telesol
7. Vodafone Ghana
8. MTN
9. Globacom
10. AirtelTigo

The quartet of Vodafone Ghana, MTN, Globacom, and AirtelTigo are majorly voice communications companies who have also fully integrated data services into their routines and so for these entities, their returns have rather seen monumental leaps. However, for those that were strictly into Internet service provision, a paradigm shift has been the only key to business sustainability.

The history of the gradual collapse of the cybercafé business bears a striking semblance to the odyssey of the payphone. Just under three decades ago, it was the main outlet of telecommunications by the broader majority of people mostly in developing countries where landline phones in the homes were

virtually impossible because of infrastructure deficit (Zuckerman, & Oskiakwan, 2006). Today the story is totally different because the cellular phone has holistically replaced the payphone in the daily routines of humankind (InfoDev, 2007). Even in corporate organizations, cellular phones have also become the foremost competitor to landline phones. Compared to the early days when the marketing of mobile phones was targeted solely at high-income earners because of the prohibitive costs of the mobile phone, the situation is totally different today. The affordability of the mobile phone and its accessories over the years has been a strategic business model adopted by equipment manufacturers to tap the "fortune at the bottom of the pyramid" (Pralhad, & Hammond, 2002; Paul, 2004; GSMA, 2006; Prahalad, 2006), Figure 1 shows the graphical illustration of the decline of payphone usage for voice communications over time.



**Figure 1:** A graph showing the decline in the usage of payphone usage over time

**Sources:** Bell Aliant, Bell Canada, MTS, Northwestel, SaskTel, Télébec, and TCC

For a fact in the latter days of the in situ payphones in most markets, the mobile payphone was rolled onto the markets so that low-income earners could still access telecommunications services so as not to be marginalized (Mobile Africa, 2005). However, the design and development of low-priced personal cell phones a few years later also meant that the mobile payphones did not last long on the consumer markets. Fast forward to today, and there is an overwhelming the payphone has totally disappeared and in its place we have the cellular mobile phones.

This study focused on Internet users interviewed at randomly selected Internet cafés, and their administrators all in the city of Accra. Also, a random selection of interviewees who had access to smartphones were also polled to gain an insight into the reasons why they have now resorted to Internet on the go via their mobile devices. Accra was also used as the study area as it has the highest number of well-equipped cafés in the whole of Ghana and also the highest Internet penetration rate in Ghana. The study was commissioned purposely to formally identify the reasons for the downturn in the fortunes of Internet cafés.

#### METHODOLOGY OF RESEARCH

In this study, data was gathered on Internet cafés using three research instruments. These are *questionnaires*, *interview guides*, and *observation schedule*.

The first part involved those who run the cafés. The second part also dealt with those who randomly were asked questions during random visits to Internet cafés. The third part was also a random selection of people who used smartphones to access the Internet. For these groups of people, the main thrust of questions posed to them were whether in the past they used to frequent Internet cafés to surf the Web or not, as they colloquially put it. This study, used chi-square tests to analyze the data acquired. A chi square statistic,  $\chi^2$ , is used for the purposes of investigating whether distributions of categorical (non-numerical) variables have any statistically significant differences between them. When we carry out a  $\chi^2$  test and observed frequencies are similar to expected frequencies, we interpret the value of  $\chi^2$  as small and consequently retains the null hypothesis (fail to reject  $H_0$ ), whilst when observed frequencies are significantly different from expected frequencies, then we conclude that  $\chi^2$  is large and the null hypothesis is rejected (reject  $H_0$ ). By definition, the chi-square statistic is given as:

$$X^2 = \sum \frac{(O-E)^2}{E} \quad (1)$$

In equation (1) above,  $\chi^2$  is the chi square statistic,  $O$  is the observed frequencies, and  $E$  is the expected frequencies.

The hypotheses for all our chi-square tests throughout this study will be as follows:

- $H_0$ : The categorical variables are independent.  
 $H_1$ : The categorical variables are related.

**RESULTS**

In Table 1 the responses are from people who run and manage the various Internet cafés visited in this research work. To ensure fairness in this work, the cafés were randomly selected from residential areas classified as either high income, middle income, or low income. The main thrust of question to these managers were whether they have experiences a surge in the numbers of their patrons or not. The responses were then classified as either a Yes or No. A chi-square analysis test was next performed on the compiled data to affirm the findings.

**Table 1:** Table showing responses from café managers within selected communities

Has patronage improved or not?	High income	Middle income	Low income	Row totals
Yes	0	3	11	14
No	18	16	26	60
Column totals	18	19	37	74

A chi-square test was also performed on the responses from respondents randomly selected concerning the kinds of uses they normally put their smartphones to.

The calculations using R yields,  $\chi^2 = 7.1404$ ,  $df = 2$ ,  $p\text{-value} = 0.02815$ .

From the original table, there are two rows and three columns.

Hence our degree of freedom will be  $(3-1)(2-1) = 2(1) = 2$ . With our significance level,  $\alpha = 0.05$ , and  $df = 2$ , we observe from tables that the critical value is 5.991. The test statistic obtained using R is 7.1404 and it exceeds the threshold (5.991) read from tables, so we conclude that the data is consistent with the fact that there is a relation between the extent or frequency of patronage of an Internet café and the income group in which an individual fall. At the 0.05 level of significance, there is evidence of a relationship between income group and usage of an Internet café to access Internet services by potential clients, given that the  $p$ -value of 0.02815 is smaller than the significance level of 0.05.

Table 2 portrays the responses of those patrons of Internet cafés we visited randomly as part of this study. There were instances when the visited outlets were virtually empty with the managers looking forlorn and somber. For the instances that patrons were interviewed in selected cafés, most of them indicated that they were casual visitors and not regular visitors because they just wanted to do something via the Internet on a bigger screen but normally, they used their smartphones to carry out such a task. The responses solicited were a simple YES or NO. A chi-square analysis test was next carried to affirm the findings obtained from this exercise.

**Table 2:** Table showing responses from Internet café patrons

	YES	NO	Row totals
Are you a regular visitor to this café?	16	37	53
Do you normally encounter problems using the computers at an Internet café?	44	14	58
Is the speed of the Internet satisfactory for you?	12	56	68
Column totals	72	107	179

A chi-square test was also performed on the responses and the results are as below.

The calculations using R with Yates' continuity correction factored in yields,  $\chi^2 = 47.272$ ,  $df = 2$ ,  $p\text{-value} = 5.432e-11$ . From the original table, there are three rows and two columns. Hence our degree of freedom will be  $(3-1)(2-1) = 2(1) = 2$ . With our significance level,  $\alpha = 0.05$ , and  $df = 2$ , we observe from tables that the critical value is 5.991. The test statistic (47.272) exceeds the critical or threshold value (5.991), so we conclude that the data is consistent with the fact that there is a relation between the frequency of Internet use at cafés by patrons and their experiences. At the 0.05 level of significance, there is evidence of a relationship between using the Internet at a café and the reasons for the fall in numbers as compared to the recent past and this is confirmed by the small value of the  $p$ -value of 5.432e-11 compared to the significance level of 0.05.

Since smartphones have become very common over the last few years, even very low-income people have access albeit very poor quality (Mobile Africa, 2005; GSMA, 2006). It was therefore seen as in order to interview smartphone owners for purposes of soliciting their views as whether they adopt mobile Internet when they have to use Internet services or not. Table 3 gives the

responses obtained from such groups of people interviewed concerning their Internet usage choices.

**Table 3:** Responses from smartphone users on their Internet experiences

Type of question	Mobile Internet	Café	Row totals
Do you use mobile Internet or an Internet café for Internet services?	23	2	25
Do you feel more secured using a mobile Internet or cybercafé?	46	21	67
Do you consider cybercafés still relevant today?	15	19	34
<b>Column totals</b>	<b>84</b>	<b>42</b>	<b>126</b>

A chi-square test was also performed on the responses obtained in Table 3

The calculations using R yields,  $\chi^2 = 15.119$ ,  $df = 2$ ,  $p\text{-value} = 0.0005212$ .

The original table gives us a degree of freedom of 2 and hence at the 0.05 significance level, we obtain a threshold or critical value of 5.991 from chi-square tables. The test statistic (15.119) obtained using R statistical software is greater than this threshold value so we reject the null hypothesis, i.e., there is a significant difference between the observed and expected values. At the 0.05 level of significance, there is evidence of a relationship between mobile Internet service and ownership of a smartphone, more so from the small probabilistic value (p-value) obtained through calculation. It appears the resort to accessing Internet services via a smartphone rather than at a café is very much impacted by the factors such as security, latency of the services as well as convenience.

### DISCUSSION

The chi-square analysis tests on all the data gathered confirmed one perception or the other. The data in Table 1 indicated that managers of cafés in the three different income communities interviewed gave responses that tallied with the recent perceptions. For instance, the fact that most of the computers used are very old and low on memory were disincentives to most patrons. From the data in Table 3, the views of those who virtually use the smartphone to carry out almost every Internet service in comparison to visiting an Internet café, was overwhelming. Most of them gave as reasons, the convenience of being able to use the Internet at any time irrespective of location, the security of their data, and the unreliability of the services of most cafés as the major factors resulting in the adoption of the smartphone for Internet services. This implies that the smartphone despite its usually prohibitive cost depending on brand, is indeed a technological facilitator making job execution and social networking possible irrespective of location.

### Conclusions

This study wanted to understand the reasons behind the dwindling fortunes of Internet cafés which were very prominent especially in the dot-com boom era. It turns out that the proliferation of smartphones which are Internet-enabled have

indeed been key in the way Internet cafés have lost relevance presently. For a fact, with the exception of a few Internet-based services that perhaps cannot be done with a phone, all the other services are possible to do using a smartphone. Thus, given the crave for smartphone acquisition, it makes logical sense why the fortunes of most Internet cafés have seen a massive downturn. As a result, in present day Ghana, even the least paid by way of income, are likely to purchase a smartphone even if on credit just to be able to enjoy its numerous Internet facilities such as WhatsApp, Facebook, Twitter etc. After all, if in the comfort of one's bed, it is possible to enjoy an all-in-one device that can provide TV pictures, applications of various news portals, a variety of social networking sites etc., then it presupposes that its acquisition is worth the investment. Moreover, the inconvenience of always having to leave one's home or location to visit the nearest café is eliminated as well as the risk of being exposed to cyber criminals is reduced to the barest minimum compared to assessing Internet services from a café.

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