

Introduction to Web Science

Assignment 11

Prof. Dr. Steffen Staab

staab@uni-koblenz.de

René Pickhardt

rpickhardt@uni-koblenz.de

Korok Sengupta

koroksengupta@uni-koblenz.de

Olga Zagovora

zagovora@uni-koblenz.de

Institute of Web Science and Technologies

Department of Computer Science

University of Koblenz-Landau

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This assignment focuses on **Online Advertisement**. As discussed in the class, teams with exact similar answers that give an indication of copying will receive null points for those questions. If you are taking answers from some source, please cite your sources.

Delta Group Members

Oana Dumitrasc

odumitrasc@uni-koblenz.de

Alisa Becker

alisabecker@uni-koblenz.de

Omar Aly

oaly@uni-koblenz.de

1 Online advertisement (10 points)

In the videos about online advertisement, you learned about the three different payment methods for online advertisement.

1. Name all three methods.
 - Cost Per Mille(CPM)
 - Cost Per Acquisition(CPA)
 - Cost Per Click(CPC)
2. Mention the advantages and disadvantages, for publisher and advertiser, of all the payment methods and explain them in your own words.
 - Cost Per Mille(CPM)
 - Advantages
 - * Publisher: Can be beneficial if publisher users are not willing to click the adverts. Also is especially good when publisher have a high number of visitors who come and go often, without looking too much into the content.
 - * Advertiser: No real advantage appears here.
 - Disadvantages
 - * Publisher: No real disadvantage appears here.
 - * Advertiser: very high risk to get the ad clicked or even really noticed, which means no real advertiser web site visits.
 - Cost Per Acquisition(CPA)
 - Advantages
 - * Publisher: No real Advantage is here, except if we counted that users will visit the publisher's site more because it had a lot of good ads for them.
 - * Advertiser: Only pays when real traffic or product selling happens on the website.
 - Disadvantages
 - * Publisher: Very High risk, because the publisher's site users may not be interested in the kind of ads shown, which means no money.
 - * Advertiser: No big disadvantage except if we count that the advertiser will not reach many people, but also will not pay any money.

- Cost Per Click(CPC)
 - Advantages
 - * Publisher: is good when visitors are easily tempted to follow links that look like something they are looking for, which means the advertiser pays for every click received on the publisher side, even though that does not guarantee the purchase of a product, the downfall of this might be click fraud.
 - * Advertiser: pays only if the ad is clicked and pays according to the number of clicks
 - Disadvantages
 - * Publisher: If users/visitors are experienced in using the web, this method might not work, as they will be "immune" and quite possibly ignore the adverts, which means risk also.
 - * Advertiser: as payment is by click, so the risk of not selling the real product exists

3. Provide real world examples for the three payment methods.

- Cost Per Mille(CPM): Banner Ads, Google Display Ads, Flash Ads, Newspaper Ads, TV Ads.
- Cost Per Acquisition(CPA): Retargeting Ads, Google AdWords(it also tracks if you go to the website or just clicked using cookies).
- Cost Per Click(CPC): Google AdWords, Microsoft adCenter, Twitter Ads and Facebook Ads

2 Payments in Online Advertisement(15 points)

Provide the complete calculation with your solutions for the following questions.

1. An online advertisement company offers you to advertise your website on a cost-per-click base (CPC) with a cost of 0.70€ per click. Assuming that in average three out of ten visitors of your website are buying a product from which you are earning 20€, would you accept this offer? What is your average profit/loss per visitor?

Answer:

- Yes, I will accept this offer
 - as in average 3 out of 10 visitors are buying a product so
Conversion Rate(CR) = 0.3 (calculated from "number of goal achieved(3)" \div "number of visits(10)")
as the CPC = 0.7 and the CR = 0.3
therefore
acquisition Cost = $CPC/CR = 0.7/0.3 = 2.333333 \text{ €/customer}$
therefore
acquisition Cost for 3 customers will be = 7€
As stated the earning from 3 customers buying product is 20€for each customer
therefore
the profit will be 60€(earning from all customers) - 7€(acquisition cost for 3 customers) = 53€profit from all 10 visitors
therefore
average profit per visitor will be = 5.3 €
2. What would be the minimal conversion rate (CR) to guarantee your profit?

Answer:

- That depends on how much euros needed as a profit, but that is something(the Conversion Rate) could be calculated from the acquisition cost equation.
therefore
the current return comes from one customer is 20€
and as the current acquisition cost is 2.3333€/Customer
therefore
with profit margin equals to $60€ - 7€ = 53€ = 5.3€ / \text{customer}$ to minimize
Assuming a profit of 1€/visitor, that means 10€for all visitors which means 50 euro acquisition cost for 3 customer which means acquisition cost = $16.66666666 / \text{Customer}$
And from acquisition cost equation
a Conversion Rate (CR) = $0.7 \div 16.66666666 = 0.042 = 4.2 \%$ should be the minimum to guarantee profit of 1€.
3. Two online advertisement companies A and B are making you offers to advertise your website. Company A follows a cost-per-mille (CPM) model with a cost of

2,40€ for displaying your banner advertisement thousand times. Company B follows a cost-per-action (CPA) model charging a commission of 6% from every profit generated on your website through clicks on the banner ad. Assuming a click-through-rate (CTR) of 0.5%, a conversion rate (CR) of 20% and an average profit of 40€ for every transaction on your website, which offer is the best?

Answer:

- Company A:
as a 2,40€ has to be paid for a 1000 views and the CTR is 0.5
Therefore
from 1000 views we get 5 clicks and as the CR is 20%
Therefore
from the 5 clicks we get 1 real purchasing activity which in average the profit is 40€ so we paid 2,40€ and we get 40€
 - Company B:
To get one purchasing process with 0.5% as CTR and 20% CR we need also 1000 ad views for 5 clicks to convert to real 1 purchasing which will give us 40€ as profit on this the company take 6% which is 2,40€ so at the end we had to pay 2.4€ to get 40€ as a profit
 - So it's the same and will not make any difference which company we choose.
4. Assuming an online advertisement campaign for a website has obviously a high click-through-rate (CTR), but the earnings from the website are still very poor. What do you think could be the problem (please provide your answer in one or two paragraphs)?

Answer:

A high click-through-rate (CTR) says that the ad had high number of views and also high number of clicks, a poor earnings from the website are saying that we had one of those issues:

- The Ad is saying something which is not true or not completely fulfilled on the real website which for sure increases the bounce rate which is not mentioned in the situation and could be very high if measured.
- There is a fraud-clicking from the publisher or one of the Advertiser competitors
- The advertiser landing page is not that good or describable for what the website about, or the User Interface isn't good so that the user navigation through the website is hard which also increase the bounce rate.

3 Online vs. TV Advertisement (10 points)

1. Which of the three payment models is most similar to advertisement on TV (*explain your choice and also why you think other models are not similar*)?
 - The most similar to TV advertisement is the Cost Per Mille(CPM) which don't count how many users really pay attention to the ad to but the product or even to click it.
 - The less similar to TV advertisement is the Cost Per Acquisition(CPA) because when you see a TV ad you might call the advertiser or go to them and the most likely sentence you are going to use or the most common question you are going to be asked is "I saw your TV Ad ..." or "From where you get to know us?", also its not that similar because the mentioned case is not always happening and it does not guarantee a real product purchasing.
 - The not similar way is for sure the Cost per click (CPC) and that's obvious because on TV ads you don't have the clicking ability or even tracking the ad to the product it self.
2. What do you think are the most important advantages of online advertisement compared to advertisement on TV (*highlight 5 advantages and explain each of them*)?
 - **Less expensive:** A main benefit of online ads is that it has a much affordable price when compared with the TV ads costs. On the internet, you can advertise at a way more inexpensive cost for a much wider audience.(in case of CPA and CPC)
 - **Wider geographical reach:** Online ads gives your campaigns global coverage, which helps your online campaigns reach more audiences. This will definitely help you achieve superior results via your online advertising strategy.(i.e: Facebook geographical targeting ads)
 - **No rigorous payment:** This is another appealing benefit of online ads. In TV ads you have to pay the full amount of money to the advertising agency, no matter the results. In online ads however, you have to pay only for the qualified clicks, leads or impressions.(that not happening in CPM, but in CPA and CPC)
 - **Easy result measurement:** The fact that it's so easy to measure makes online ads more appealing than the TV ads methods. You can find a lot of effective analytics tools in order to measure online ads results, which helps you know what to do and what not to do in your following campaigns.(but this puts more load on the advertising agency)
 - **More targeted audiences:** In comparison with TV ads, online ads helps to easily reach the targeted audience, which leads to campaign's success.

Important Notes

Submission

- Solutions have to be checked into the github repository. Use the directory name `groupname/assignment11/` in your group's repository.
- The name of the group and the names of all participating students must be listed on each submission.
- Solution format: all solutions as *one* PDF document. Programming code has to be submitted as Python code to the github repository. Upload *all* `.py` files of your program! Use **UTF-8** as the file encoding. *Other encodings will not be taken into account!*
- Check that your code compiles without errors.
- Make sure your code is formatted to be easy to read.
 - Make sure you code has consistent **indentation**.
 - Make sure you comment and document your code adequately in English.
 - Choose consistent and intuitive names for your identifiers.
- Do *not* use any accents, spaces or special characters in your filenames.

Acknowledgment

This latex template was created by Lukas Schmelzeisen for the tutorials of "Web Information Retrieval".

LA^TE_X

Currently the code can only be build using **LuaLaTeX**, so make sure you have that installed. If on Overleaf, there's an error, go to settings and change the **L**A^TE_Xengine to **LuaLaTeX**.