FutureTDM
Explore . Analyse . Improve

STORIES

IMPROVING UPTAKE OF TEXT AND DATA MINING IN THE EU

Facts

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TDM Spotlight

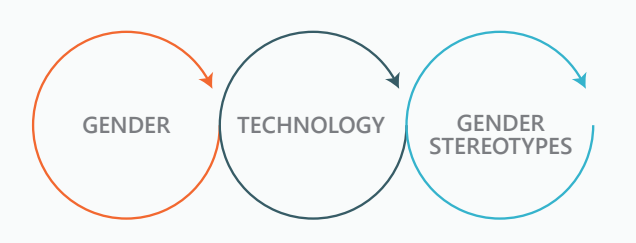
TDM and Gender Issues

"[...] technologies do not work without the people who produce, handle, or use them. Furthermore, humans associate their technological activities with the categories by which they divide and define themselves - age, wealth, race, education, work, region, and, of course, gender [Gender and Technology: A Reader. Edited by Nina E. Lerman, Ruth Oldenziel, and Arwen P. Mohun. Baltimore: Johns Hopkins University Press, 2003.]

Technology has always been gendered; it is primarily associated with the concept of "masculinity" because men are frequently found in positions where they can decide upon, design and develop technologies serving primarily their needs. Gender (which for the purpose of this presentation is restricted to male vs female, leaving out the rest of the spectrum of gender fluidity) affects the design of technology which in turn strengthens or weakens gender stereotypes.

In order to detect and present the interrelation of TDM and gender we should be able to provide answers to the following questions:

- Who has been deciding upon, designing and developing TDM?
- Who has been using TDM?
- Who is addressed by TDM?
- Who can benefit from TDM?



As concerns the first two questions, we, intuitively, suppose that what applies to technology in general, applies to TDM as well. We therefore expect women to be underrepresented in job positions related to TDM and women users to be significantly fewer than men. However, real life data to support or reject these hypotheses is scarce to find. Official databases concerned with gender issues (e.g. Statistics from European Institute for Gender Equality/ EIGE http://eige.europa.eu/gender-statistics, the United Nations Economic Commission for Europe/ UNECE Gender Statistics http://www.unece.org/statistics/areas-of-work/statssoc/gender-statistics.html, or the Gender Data Portal, http://datatopics.worldbank.org/gender/home) do not provide information for specific technologies such as TDM.

We can get a general idea from statistics provided by Linkedin data covering more than 364M professionals: women represent 25% of all software engineer profiles in technology showing that there is no

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TDM and Gender

WHO?	WHO?	WHO?	WHO?
DECIDES DESIGNS DEVELOPS	USES	IS ADRESSED TARGETED	CAN BENEFIT

gender balance with women being even fewer in some technology applications (http://linkedin-gender-diversity.silk.co/).

On the other hand, there are several examples of gender focused TDM applications. For instance, data mining has been used in social networks such as MySpace so as to detect emotion denoting gender or/and age differences. Women have been proven more likely to give and receive more positive comments than men, thus resulting in females being "more successful social network site users partly because of their greater ability to textually harness positive affect." (https://www.researchgate.net/publication/220433642_Data_Mining_Emotion_in_Social_Network_Communication_Gender_Differences_in_MySpace)

Another application of TDM targeting gender is the correlation of specific diseases either with men or women. This is the case of data mining performed on the publicly available Tinnitus Archive which showed a number of statistically significant associations with gender: "more men with tinnitus were younger, and more men had experience of noise exposure. Women were more likely to hear more than three sounds in their tinnitus, hear it in both ears, experience gradual onset of tinnitus, and hear it at lower pitches." (https://www.researchgate.net/-publication/258165088_Data_Mining_for_Gender_Differences_in_Tinnitus)

Finally, in some cases, TDM has helped to overcome gender barriers and inequalities. Lines like DoSomething.org offer help to people by using TDM in combination to sentiment analysis so as to detect age or gender groups (teenagers, women) who are in danger.

This has been made possible by analysing text messages from mobile conversations which are saved on platforms (https://www.mobilecommons.com/blog/2014/10/sms-data-mining-saves-lives/).

Geospatial data mining techniques have been also used to investigate gender equality and empowerment of women status. A study was inspired by the promotion of gender equality and empowerment of women (one of the Millennium Development Goals of 2015) and used as indicators the women literacy rate, ratio of girls in primary, secondary and tertiary education, and employment history in different sectors of Bangladesh. (http://www.inderscienceonline.com/doi/abs/10.1504/IJKESDP.2013.058129)

Even now when more women than ever before are hired to lead organisations and more men use their right to parental leave the effects of gender stereotyping cannot be underestimated. One still observes the persistence of stereotypical gender perceptions across different generations, countries of the European Union and fields of life. It is in most everyday realities that gender matters - in education, work, family and relationships, health, leisure, determination of identity, society life.

Source: http://eige.europa.eu/more-areas