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Identifying Motivation Factors for Using Various Programme Guide Options

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SUMMARY

Programme guides have been a source of scheduling information since the beginning of television. The electronic programme guide is nowadays an omnipresent service on all television sets, but still only 55% of respondents in this research select it as a primary option, while others use teletext, Internet portals or applications and printed programme guides. Motivation factors for using various programme guide options were evaluated with the help of the UTAUT2-based research model. When it comes to the behavioural intention to use the programming guide option, the model explained 89.6% of the variance in the case of the electronic programme guide, 71.0% in the case of teletext and 80.1% in the case of Internet portals and applications. The results indicate that for all options, the independent variables of habit (users' assessment based on previous experiences) and performance expectancy (the users' belief that by using the solution, they will become more productive) are the main motivators for the behavioural intention to use the programme guide option. The individual's perception that the selected option is a good value for money is also important to the users of the electronic programme guide and Internet portals, while the social influence variable, which outlines the users' belief that the individuals

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who they find important will support them in the use of the selected option, affects teletext and Internet portals. The results also indicate that habit is the dominant motivator behind the actual use of either of the programme guide options.

Keywords: electronic programme guide, UTAUT2, teletext, programme guide, behavioural intention

Introduction

At the very beginning of its evolution, starting from the 1930s, the television was simple – all television content consisted of live programmes, but there was still a need to inform viewers about the programming schedules, which is how television programming guides became an inseparable part of daily newspapers (Doyle, 2010). Changes started happening in 1956 with the invention of the first practical video recording device: the Ampex Corporation video recorder developed by Ginsburg and Dolby (The Editors of Encyclopaedia Britannica, 2017). This machine revolutionized television broadcasting, enabling the emergence of new formats of broadcasts that could be pre-recorded, while live broadcasting continued for programmes that were important to viewers and were to be viewed in real time, such as sports content and news. In addition to the progress in content production, further development of technology enabled the distribution of television over satellite and cable networks, as well as the invention of teletext – a television information service very suitable for presenting programming schedules. The digitalisation of audio-video signals has led to a major acceleration in the development of the number and availability of television channels. The existing analogue terrestrial, satellite and cable networks have digitally increased their capacity to transmit television signals, while increasing the quality and resolution of the image (HD and UHD) and enabling a multichannel sound. A new service that was standardised in all digital television distribution networks is the service of the *electronic programme guide* (European Telecommunications Standards Institute, 1997). Digitisation has also enabled the transmission of television through networks based on the Internet Protocol (IP) – the IPTV and television distributed via the Internet. The emergence of the Internet-based television distribution, and in particular the progress in the technology of mobile networks, enabled access to television and video on computers, tablets and smartphones, thus changing the habits of viewers from watching linear TV in the living room to watching content on-demand (when they want) and anywhere they want to watch it. Younger generations are prone to using newer technologies and it

is expected that these advances and changes will continue to happen ('A Look Across Media', 2013). With the appearance of the Internet, websites specialized in providing programme information appeared, and the popularity of smartphones has led to the emergence of numerous applications that, in an even simpler way than websites, allow an overview of programme schedules and numerous other related functions. Technological advances greatly change the way of watching television and generally the way of consuming video content. One feature is present throughout this progress, the programming guide. Dawes (Dawes, 2015) argues that consumers still heavily rely on the electronic programme guide as a source of information about the media programme, regardless of the fact that consumers increasingly prefer to view content preselected through on-demand services and advances in the search technology and content referrals.

A recent study that evaluated the adoption of the electronic programme guide (Frank & Milković, 2018) used a research model based on the Unified Theory of Acceptance and Use of Technology 2 (Venkatesh, Thong, & Xu, 2012) and concluded that the most significant motivator for the *behavioural intention* to use the electronic programme guide is *habit* with more than 50% of influence. It is followed by *performance expectancy* which indicates that users perceive the electronic programme guide as a solution which gives them high quality information that they can quickly retrieve. Still, significant influence is caused by the *effort expectancy* and *price-value* variables, which suggests that users appreciate the ease of use of the electronic programme guide application and the fact that it is free to use. For the actual use of the electronic programme guide, there are three motivators with a similar influence. The first motivator is the *facilitating conditions* which include the availability of an electronic programme guide on every television set or digital receiver and the users' perception that they know how to use the application. It is followed by the users' *habit* and *behavioural intention* to use the electronic programme guide. Hence, that leads to the conclusion that consumers use the electronic programme guide because it has been present on every television set for a period of more than eight years during which they developed a habit to use it. Indirectly, through the *behavioural intention* to use, the fact that the electronic programme guide is quick and reliable, easy to use and free also plays a major role. As a research model, the UTAUT2 proved to be suitable since the multiple linear regression model explained 89.6% of the variance in the *behavioural intention* to use the electronic programme guide and 78.4% of the variance in *use behaviour* that represents the actual use of the electronic programme guide. The data collection for the research showed that, although the electronic programme guide is nowadays readily available on every television set and digital receiver, only 55.5% of respondents use the electronic programme guide as their first choice when they want to retrieve the programming

schedule data, and the rest, i.e. 44.5% of respondents still make use of the printed programme guide, teletext, Internet portals or smartphone applications.

The aim of this article is to research and identify the motivation factors that drive consumers to use solutions other than the electronic programme guide when they need information about the programming schedule. The same data set as for the electronic programme guide research will be used and the results will be compared.

Programme schedule information sources

Programme information can today be obtained from many sources. The oldest programme guides appeared in newspapers. The invention of teletext has made it possible to publish information about the programme on teletext pages, and the function of the electronic programme guide is today an integral part of all digital technologies for the distribution of television programmes. With the appearance of the Internet, the first websites specialized in providing programming information emerged, and the popularity of smartphones has led to the emergence of numerous applications that, in an even simpler way, allow an overview of programme schedules and numerous other related functions. According to the 2011 European Telecommunications Standards Institute (ETSI) definition (European Telecommunications Standards Institute, 2011), "Programme guides provide users of television, radio, and other media applications with continuously updated information displaying scheduling information for current and upcoming programming." ETSI also notes that the term "programme information" encompasses two different applications: programme schedules and event information, i.e. programme description within the programme, and the data for both applications are carried out using the same technical means.

A. *Printed programme guides*

Traditionally, consumers rely on printed TV guides and schedules published in magazines. Prior to the invention of television, programme guides provided a radio programme schedule, such as the Radio Times publication of 1923, which originally provided users with BBC radio programmes. At the beginning, newspaper publishers avoided publishing programme schedules because they feared that people would rather listen to news on the radio than buy newspapers and read the same news with delays, but soon the majority of newspapers brought the choice of daily television and radio programmes (European Telecommunications Standards Institute, 2011). At that time, it was customary for a household member to go to a newspaper kiosk on a weekly basis to buy a specialized weekly magazine with the programming

schedule (Dawes, 2015). As of today, there are two specialized magazines with the programming schedule in Croatia that are distributed as insets of daily newspapers on Friday: Studio as an inset to Večernji list and TV ekran as an inset to Jutarnji list. Studio and TV ekran include a detailed schedule for the free-to-air and most viewed pay TV television channels, which typically takes four pages of scheduling information for one day. Moreover, those specialized magazines also contain additional related content such as weekly reviews of what to watch, news from the movie world, and so forth. Daily newspapers have retained a section with the daily programming schedule, so that the viewer who on Friday buys the daily newspaper with the specialized magazine as an inset gets an eight days programming guide: the today's daily schedule in the section of the daily newspapers and the schedule for the next seven days in the magazine.

B. *Teletext programme schedule*

The rapid expansion of the television receivers' market has influenced the development of teletext – a technology that enables the display of continually updated menus on the TV receiver screen.

According to the European Telecommunications Standards Institute definition, teletext is a one-way, or non-interactive, service for receiving text and graphics information broadcast over analogue or digital television networks (European Telecommunications Standards Institute, 2003).

The Recommendation of the International Telecommunication Union (International Telecommunication Union, 1998) defines teletext as a digital data transfer service that can be transmitted either within the structure of an analogue television signal or by digital modulation systems. The service is primarily intended for displaying textual or pictorial material in a two-dimensional format reconstructed of encoded data on the screens of suitably equipped television receivers. Teletext services typically include the TV schedule, current events, sports news, commercials, games and subtitles.

The first teletext system was the BBC's Ceefax, which debuted in 1976 (European Telecommunications Standards Institute, 2011). Teletext is still one of the major sources of information, especially in less developed countries. One of the reasons for the success of teletext is the sense of interactivity provided to the user, although teletext is not an interactive service. The system works in such a way that the television publisher constantly sends numbered teletext pages in a series and when the user chooses one of the pages, a delay of a few seconds will usually appear until it is broadcast and the page that the user has chosen is shown. Sophisticated receivers have a memory that loads all teletext pages so that they are displayed instantly.

Teletext was almost omnipresent throughout Europe, as well as in some other regions where the majority of major television companies provided teletext services. Digitization of the distribution of television programmes has also brought new technical possibilities for rich information services, however, teletext has not been replaced, but integrated into new digital distribution platforms (European Telecommunications Standards Institute, 2017). In the Republic of Croatia, as in most other countries, digital television networks use the same teletext service as the one present on analogue television networks according to the DVB-TXT and DVB-VBI standards, which allow the emulation of analogue teletext on digital TV platforms directly on the TV or digital receiver.

Figure 1: Basic HRT teletext page (No. 100) and TV programme schedule root menu retrieved on 28 and 14 January respectively
Slika 1: Osnovna HRT teletekst stranica (br. 100) od 28. siječnja 2018. i osnovni izbornik rasporeda programa od 14. siječnja 2018.

In 1990, the Croatian Radio Television (then Radio Televizija Zagreb - RTZ) introduced teletext as a permanent television service ('Povijest HRT-a', n.d.). Teletext services substantially covered a wide range of topics, from the current news from Croatia and the rest of the world, news from sport, music and film and useful service information for the viewers to commercials (Figure 1). HRT teletext contains a detailed schedule of all HRT television and radio programmes (Figure 1). On the first page, the current and next broadcast (two yellow lines) on the current schedule, in this case of HTV 1, is shown. For more detailed schedule information, the user needs to press the yellow button on the remote control, which is equivalent to selecting the teletext page "300". In Croatia, almost all national televisions broadcast teletext, with programme schedules as one of the most important information services.

C. *Internet portals and applications with programme guides*

After the Internet boom, there was a way to present the information online with high availability (Dawes, 2015), which then resulted in the digitization of the paper TV guide and in a great change in the search of programming content. Consumers retrieve the content of their favourite channels by mouse clicking, and later by touching the screen of the tablet or smartphone. Printed programme guides are slowly becoming a thing of the past. In Croatia, consumers can choose between multiple options when they want to get information about the schedule of programmes (Table 1) – from specialized providers such as the TV Profil and Moj TV portals that have the content of all most watched programmes in Croatia and some European countries, through RTL as an example of a television company providing TV broadcasting services for their channels to pay TV operators primarily targeting their users, providing them with a simple viewing of TV and radio schedules for the TV

Table 1: An overview of web portals and applications with programming schedules
Tablica 1: Pregled web portala i aplikacija s rasporedom programa

Name	URL	App.	Features
TV Profil	tvprofil.net	Yes	Schedule categorized by teleoperators in 14 European countries; Films divided by genres, period and user ratings; News from the film world.
Moj TV	moj.tv	Yes	Schedule divided into standard genre categories and language areas (Croatian, Italian, etc.); Films and series divided by categories and telecom operators; Critics of movies and series; Showbiz and sports news.
B.net	raspored.bnet.hr	Yes	Schedule adapted to B.net packages; Most shows have a description with a picture; The schedule can be divided into just now, in the morning, in the afternoon, in the evening.
RTL	www.rtl.hr /televizija /tv-raspored	Yes	Schedule only for RTL channels; Categories: movies, series, entertainment, info and magazine, kids and miscellaneous.
Evotv	www.evotv.epg	Web	Arranged for evolution channels; Schedule divided by bouquets.
Iskon	tv.iskon.hr /TV-vodic	Yes	Schedule for all Iskon Channels; Application also enables TV viewing on smartphones; Ability to subscribe to additional TV packages via the application.

channel packages sold to users. It is common today that service providers, in addition to the web portal, also have a tablet and smartphone application.

D. *Electronic programme guide*

The first electronic programme guide services started in 1981 as information panels that displayed non-interactive schedule information, similar to those we see at the airports (European Telecommunications Standards Institute, 2011). Nowadays, the electronic programme guide is a part of every digital distribution network – terrestrial, satellite, cable, IPTV or Internet-based. Through digital television, viewers have access to hundreds of television channels with tens of thousands of programme content items per day. Linear listings of programming schedules provided by paper guides or the display of information for only one or several programmes that is typically presented on the teletext service is no longer sufficient, and what is required is an electronic programme guide that allows viewers to interactively browse through scheduling information and quickly and efficiently find the programme of their choice. Electronic programme guide delivery is standardised by the European Telecommunications Standards Institute (ETSI) (European Telecommunications Standards Institute, 1997) that enables seamless compatibility between the distribution network and television sets, digital receivers and other user devices. On the other hand, user interface and menus are not standardised and are vendor specific. Browsing and selecting programmes on a TV channel, the way of viewing broadcast time, title or genre is generated entirely within a television receiver using raw scheduling data that is sent through the distribution network. Given that each manufacturer has its own and different interface for displaying the EPG, including various buttons on the remote control or ways to run the EPG display, there is a potential problem of usability for the users who are less fluid in using the technology. To minimise these problems, there is an initiative in the industry to harmonise functionalities and interfaces, including the electronic programme guide interface, led by the Digital TV Group, an association of more than 125 companies in the TV industry that provides guidelines for the usability and accessibility of television sets (Digital TV Group, 2014).

Research model

For the purposes of this research, we adopt the UTAUT2-based research model as defined in a recent study that evaluated the adoption of the electronic programme guide (Frank & Milković, 2018). UTAUT2 is an extension of the Unified Theory of Acceptance and Use of Technology, the so-called UTAUT model (Venkatesh, Morris, Davis, & Davis, 2003), which harmonised approaches from the most reputable

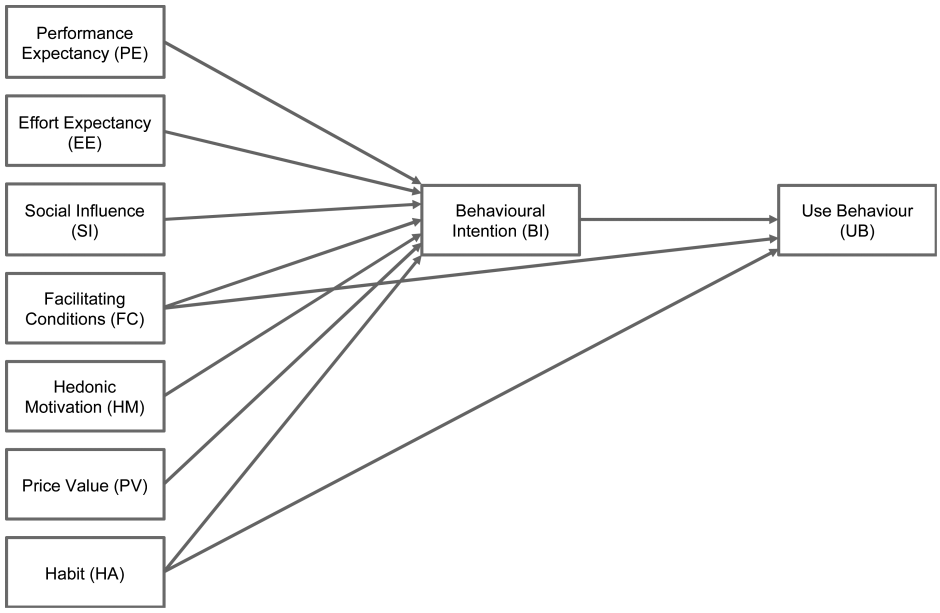

Figure 2: UTAUT2-based research model
Slika 2: Istraživački model zasnovan na UTAUT2

information technology adoption theories. UTAUT2 aims to explain the behaviour in a user-consumer context, where costs can be dominant in the acceptance of technology, where previously learned behaviours, i.e. habits exist, and where consumers often expect that the use of technology gives them satisfaction and pleasure. To cover all motivation factors, UTAUT2 defined seven constructs that affect the *behavioural intention (BI)* of the user to use the information system as defined in the Eq. (1), as well as the subsequent *use behaviour (UB)* which represents the actual use of the system (Figure 2):

- *Performance expectancy (PE)* represents the user's belief that by using the solution, he will become more productive;
- *Effort expectancy (EE)* illustrates the user's perception of the effort that is needed to become proficient in using the observed technology.
- *Social influence (SI)* outlines the user's belief that the individuals who he finds important will support him in the use of the solution.
- *Facilitating conditions (FC)* are defined as the "degree to which the individual believes that there is an organizational and technical infrastructure that supports the use of the system" (Venkatesh et al., 2003).

- *Hedonic motivation (HM)* represents the individual's expectation that the use of technology is pleasant or fun.
- *Price value (PV)* illustrates the individual's perception that the solution is a good value for money.
- *Habit (HA)* outlines the user's assessment based on previous experiences that he will be able to use the solution routinely.

$$BI = f\,(PE, EE, SI, FC, HM, PV, HA) \tag{1}$$

In order to measure the user's behaviour, UTAUT2 defines the relation between the *use behaviour (UB)* and: *facilitating conditions (FC)*, *habit (HA)* and *behavioural intention (BI)* as shown in the Eq. (2).

$$UB = f\,(FC, HA, BI) \tag{2}$$

The survey

The data set used in the evaluation of the adoption of the electronic programme guide (Frank & Milković, 2018) contains data form respondents who use various solutions in order to get information on the television programme schedule. The survey logic provided the respondents with a choice for the primary and secondary solution that they use. The total number or respondents (Table 4) for the electronic programme guide is equal to the total number of respondents, as it was the subject of the research and the survey logic ensured that all respondents provided answers for it. With 82 respondents, teletext is the second most widely used solution, 73 respondents use Internet portals and applications, while printed programme guides are still used by only 22 respondents.

Table 2: Solution selection for retrieving TV programme schedule
Tablica 2: Odabir rješenja za dohvaćanje rasporeda TV programa

Solution used for retrieving TV programme schedule or TV show data	**Number of respondents**		
	1st choice	**2nd choice**	**Total**
Electronic programme guide (EPG)	130	57	234
Teletext	54	28	82
Internet portals and applications	36	37	73
Printed programme guide	14	8	22
Total	234	130	

Analysis of research results

Table 3 aggregates and presents the statistical analysis of the respondents' data for three solutions: the electronic programme guide, teletext and Internet portals and applications in order to enable a side-by-side comparison. The electronic programme guide part of the statistical analysis is taken from the previous research (Frank & Milković, 2018) and presented here for comparison. The statistical analysis of the printed programme guide could not be carried out because the sample of respondents N=22 proved to be too small to obtain a representative statistical result and is therefore omitted from the presentation of the results. For each solution, Table 3 shows the number of respondents N that provided data for a particular solution and the number of respondents that selected a particular solution as the first choice. Notable results of the correlation analysis between all seven independent variables and the *behavioural intention (BI)* variable are presented in two categories: variables with a strong and moderately strong correlation and other variables. The same principle for the presentation of results is also used for the correlation analysis of the dependent variable of *use behaviour (UB)* and all other variables. The regression analysis results for *behavioural intention* and *use behaviour* are also presented sep-

Table 3 Notable results of the statistical analysis
Tablica 3 Značajni rezultati statističke analize

	Electronic programme guide	**Teletext**	**Internet portals and applications**
Number of respondents	N=234 total M=130 first choice	N=82 total M=54 first choice	N=73 total M=36 first choice
Notable results of the correlation analysis for Behavioural Intention (BI)			
Variables with a statistically significant ($p<0.05$) and strong ($r>0.8$) or moderately strong ($0,5<r<0.8$) correlation with BI	Habit (0.906) Performance Expectancy (0.865) Effort Expectancy (0.841) Facilitating Conditions (0.802) Price Value (0.791) Hedonic Motivation (0.765) Social Influence (0.649)	Habit (0.790) Performance Expectancy (0.731) Price Value (0.605) Hedonic Motivation (0.593) Effort Expectancy (0.593) Social Influence (0.511)	Habit (0.780) Performance Expectancy (0.745) Effort Expectancy (0.578) Facilitating Conditions (0.549) Price Value (0.548)
Other variables		Facilitating Conditions (0.480)	Hedonic Motivation (0.471) Social Influence (0.440)

Table 3 Continued
Tablica 3 Nastavak

	Electronic programme guide	Teletext	Internet portals and applications
Notable results of the correlation analysis for Use Behaviour (UB)			
Variables with a statistically significant ($p<0.05$) and strong ($r>0.8$) or moderately strong ($0,5<r<0.8$) correlation with UB	Performance Expectancy (0.878) Behavioural Intention (0.856) Effort Expectancy (0.840) Habit (0.825) Facilitating Conditions (0.797) Price Value (0.728) Hedonic motivation (0.662) Social Influence (0.620)	Habit (0.698) Behavioural Intention (0.666) Performance Expectancy (0.653)	Habit (0.655) Performance Expectancy (0.599) Behavioural Intention (0.548)
Other variables		Price Value (0.448) Hedonic Motivation (0.442) Effort Expectancy (0.417) Facilitating Conditions (0.388) Social Influence (0.255)	Effort Expectancy (0.283) Hedonic Motivation (0.262) Facilitating Conditions (0.231) Social Influence (0.190) Price Value (0.169)
Notable results of the regression analysis for Behavioural Intention (BI)			
Statistically significant variables ($p<0.05$) with the corresponding b	Habit (0.529) Performance Expectancy (0.214) Effort Expectancy (0.157) Price Value (0.157)	Habit (0.479) Performance Expectancy (0.414) Social Influence (0.173)	Facilitating Conditions (0.398) Habit (0.369) Performance Expectancy (0.221) Price Value (0.153) Social Influence (0.143)
Coefficient of determination	$R^2=0.896$	$R^2=0.710$	$R^2=0.801$
Notable results of the regression analysis for Use Behaviour (UB)			
Statistically significant variables ($p<0.05$) with the corresponding b	Facilitating conditions (0.341) Habit (0.300) Behavioural intention (0.297)	Habit (0.449) Behavioural intention (0.309)	Habit (0.536)
Coefficient of determination	$R^2=0.784$	R2=0.522	$R^2=0.429$

arately with statistically significant variables and the coefficient of determination, which is the single most important parameter for the assessment of the model's quality. This chapter presents the statistical analysis, a link with the theoretical and logical background and finally, the interpretation of the results and conclusions.

A. *Evaluation of motivators for the use of the electronic programme guide*

The use of the electronic programme guide was tested on all respondents (N = 234), 55.5% of which stated that they primarily used the electronic programme guide (Table 3). The correlation analysis shows that all seven independent variables of the UTAUT2 model (Figure 2) have a strong or moderately strong correlation with the *behavioural intention* variable. The most significant correlation is between *behavioural intention* and *habit*, followed by *performance expectancy*, *effort expectancy* and *facilitating conditions*. Moderately strong correlations of *behavioural intention* are with *price value* and *hedonic motivation*, while *social influence* has the weakest correlation, which indicates that the respondents are, in the case of the electronic programme guide use, mostly indifferent to the influence of others. Additionally, the UTAUT2 model defines the relation between the variables of *behavioural intention*, *habit* and *facilitating conditions* and the dependent variable of *use behaviour* (Figure 2). An indication of the model's validity is a strong correlation between *use behaviour* and *behavioural intention*, as well as *habit*, while the same is practically true for the *use behaviour* and *facilitating conditions* pair with the correlation $r = 0.797$. All variables in the sample have a strong or moderately strong correlation, which indicates the high quality of the model, but which also points out the potential problem of multicollinearity that negatively affects the regression model. To solve the issue of multicollinearity, hierarchical multiple linear regression had to be applied in order to construct a model with the selected variables according to the stepwise method with a forward selection. The process of developing the final model resulted in the inclusion of independent variables: *habit (HA)*, *performance expectancy (PE)*, *effort expectancy (EE)* and *price value (PV)*, as shown in the Eq. (3).

$$BI = -0.073 + 0.529HA + 0.214PE + 0.157EE + 0.157PV \quad (3)$$

In the final linear regression model, all obtained parameters are statistically significant ($p<0.05$), and the whole model is statistically significant (Table 3). The coefficient of determination of $R^2 = 0.896$ was determined, meaning that it is possible to interpret 89.6% of the variance with this model. *Habit (HA)* has the dominant influence on the *behavioural intention (BI)*, which indicates that viewers already got used to the electronic programme guide and have developed a habit of using it. An

increase of *habit (HA)* by one unit increases the *behavioural intention (BI)* to use the electronic programme guide by 0.529 units. The development of such a degree of habit is logical due to the fact that the electronic programme guide is a standard feature of all TV sets and digital receivers and has been available to a whole population of viewers for more than eight years. The second most significant motivator is *performance expectancy (PE)* which, when increased by one unit, increases the Behavioural Intention to use by 0.214 units. We could conclude that viewers perceive the electronic programme guide as a service that quickly gives them the quality information that they need. A unit increase of *price value (PV)* or *effort expectancy (EE)* causes an increase of the *behavioural intention (BI)* by the still significant 0.157 units, which indicates that viewers appreciate the fact that the electronic programme guide is a free service, and that the ease of use of the electronic programme guide is important to them.

The second step in evaluation according to the UTAUT2 model is the construction of the multiple linear regression model of the *use behaviour (UB)* dependent variable, which implies the actual use of the electronic programme guide. *use behaviour* (UB) is influenced by *facilitating conditions* (FC), *habit* (HA) and *behavioural intention* (BI) according to the Eq. (4).

$$UB = 0.343 + 0.341FC + 0.300HA + 0.297BI \quad (4)$$

The coefficient of determination is $R^2 = 0.784$, which means that with this model, it is possible to interpret 78.4% of the variance. The actual use of the electronic programme guide that is represented by the *use behaviour (UB)* variable is the most significantly influenced by *facilitating conditions (FC)*, where *use behaviour (UB)* changes by 0.341 units when *facilitating conditions (FC)* change by one unit. *Habit (HA)* with β=0.300 and *behavioural intention (BI)* with β=0.297 have a similar influence on *use behaviour (UB)*. These results indicate that television viewers appreciate the omnipresence of the electronic programme guide. It has been a standard service on every television set or digital television receiver for a period longer than eight years. During that time, viewers have developed the habit of using the electronic programme guide, which is indicated not only by the direct relation of *habit* to *use behaviour*, but also through the *behavioural intention* to use the electronic programme guide, which is most significantly influenced by *habit*. The results also indicate that respondents perceive the electronic programme guide as quick, reliable and easy to use. The corresponding motivators of *performance expectancy* and *effort expectancy* both have a strong correlation with *habit*, i.e. the frequent use of the electronic programme guide. Therefore, we can conclude that *habit* is the main motivator for the use of the electronic programme guide.

B. *Evaluation of motivators for the use of teletext*

Teletext is the first choice for 54 of 234 respondents (Table 2) or 23% of the total number, which is ranked immediately after the electronic programme guide. Teletext is the third choice for the existing electronic programme guide users when they choose the alternative. Of the 130 respondents claiming to use the electronic programme guide, 28 of them, i.e. 22% reported using the teletext, which is a number smaller than the one referring to the respondents who use only the electronic programme guide (44%) and Internet portals or applications (28%).

The total number of subjects for whom teletext data was collected (where teletext is the primary or secondary choice) is $N = 82$, which is significantly less than the sample of subjects for the electronic programme guide. The correlation analysis (Table 3), as in the case of the electronic programme guide, shows that all links between all independent variables and the *behavioural intention* are statistically significant, but are generally weaker compared to the analysis for the electronic programme guide, which is the probable impact of a significantly lower number of statistical samples. Looking at the correlation of the seven independent variables from the model with the dependent variable of *behavioural intention*, we see that none of the pairs have a strong correlation – the six variables have a medium strong correlation, with *habit* and *performance expectancy* being at the upper bound of a medium strong positive correlation to a strong positive correlation. Such result is in line with the result for the survey sample of the electronic programme guide, where *habit* and *performance expectancy* also have the strongest correlation to the *behavioural intention*. However, there is a big difference in the case of *facilitating conditions* which have a strong correlation to the *behavioural intention* in the case of the electronic programme guide, and the weakest correlation of all variables in the case of teletext. A possible reason for such a discrepancy could be the difference between the respondents' subsets – the respondents who selected teletext as their first choice are loyal teletext users who evaluate beforehand that they have everything needed for its use. The part of the respondents who primarily use the electronic programme guide and selected teletext as their second choice can compare teletext and the electronic programme guide and conclude that teletext is technically inferior, and they thus have the impression of "something missing" when using teletext. Such respondent perception could cause a gap in the results between the technologies. The final multiple linear regression model for the *behavioural intention* was also constructed by using the hierarchical multiple linear regression and stepwise method with a forward selection, and it resulted in three independent variables that affect the *behavioural intention* as shown in the Eq. (5).

$$BI = 0.104 + 0.479HA + 0.414PE + 0.173SI \quad (5)$$

Similarly, as for the electronic programme guide evaluation, *habit* and *performance expectancy* are the most significant factors behind the *behavioural intention*. *Habit* is the strongest motivator that with the increase of one unit increases the behavioural intention by 0.479 units, but it is closely followed by performance expectancy, which increases the behavioural intention by 0.414 units when increased by one unit. The still significant impact of the *social influence* variable with β=0.173 may indicate that, since teletext is the technology that has been present for decades longer than the electronic programme guide, it is possible that the users who conservatively use technology (teletext in this example) have a significant influence on others in their vicinity. Such "traditionalist" influence is not possible when it comes to the electronic programme guide, since it is a much newer technology when compared to the teletext. The ANOVA analysis shows that this model can explain 71.0% of the variance (Table 3) and that the final model obtained is good and statistically significant.

According to the research model (Figure 2), the dependent variable of *use behaviour,* which denotes the actual use of teletext, is influenced by *behavioural intention, habit* and *facilitating conditions*. The regression model construction showed that that variables of *habit* and *behavioural intention* were statistically significant, while the variable of *facilitating conditions* was not due to the lower correlation with *use behaviour*, and in this case, it was also necessary to create the starting and final multiple linear regression model. Therefore, the variable of *facilitating conditions* is excluded in order to enhance the starting multiple linear regression model. This resulted in the final multiple linear regression model for *use behaviour (UB)*, i.e. teletext usage, with two statistically significant variables: *habit (HA)* and *behavioural intention (BI)* as in the Eq. (6).

$$UB = 1.425 + 0.449HA + 0.309BI \quad (6)$$

The equation shows that, for an increase of *habit* by one unit, *use behaviour* increases by 0.449 units, and by 0.309 units if *behavioural intention* is increased by one unit. From the coefficient of determination of $R^2 = 0.522$, we conclude that this model can account for 52.2% of the variance, and that as much as 47.8% of the variance cannot be interpreted by the model. These parameters show that the obtained linear regression model of the two independent variables of *habit* and *behavioural intention* is not of the highest quality, but still appropriately interprets the dependent variable of *use behaviour* or the actual use of teletext.

C. *Evaluation of motivators for the use of Internet portals and applications*

36 respondents or 15% of the total number of respondents choose the option of an Internet portal or application as the primary choice when they are put in the situation that they need programme scheduling information. That is the third-ranked option – after the electronic programme guide and teletext, but it is still in front of the choice of the printed programme guide (Table 2). Internet portals and applications are preferred when respondents select the second technology they use, as seen on the example of 37 respondents, which is more than the number of respondents who selected the teletext as the second solution they use following the electronic programme guide. This may indicate that Internet portals and applications are used in situations where the information provided by the electronic programme guide is not sufficiently detailed. The total number of respondents who selected Internet portals and applications as the primary and secondary choice is N = 73, which is slightly less than the sample for the teletext and is significantly less than the sample for the electronic programme guide.

Unlike in the cases of the electronic programme guide and teletext, the correlation analysis for the variables in the case of the Internet portal and application model shows pairs of variables whose correlation is not statistically significant. For the UTAUT2-based research model (Figure 2), it is important to observe the correlation of independent variables with the variables of *behavioural intention* and *use behaviour* (Table 3). *Habit* and *performance expectancy* are highlighted as the variables with a moderately strong correlation to *behavioural intention* at the upper boundary to the strong correlation, which is fully in line with the results of the analysis for the electronic programme guide and teletext, where there is the same order of the strongest correlations. Furthermore, a moderately strong correlation with the *behavioural intention* belongs to *effort expectancy*, *facilitating conditions* and *price value*. *Use behaviour* is moderately strong correlated with *habit, performance expectancy* and *behavioural intention*. There is only a weak correlation between the *facilitating conditions* and *use behaviour*, although the research model predicts the direct impact of *facilitating conditions* on *user behaviour*. This discrepancy can be explained by looking into the descriptive statistics. Most respondents claim that they have all the prerequisites and resources they need to use Internet portals and applications, regardless of the intensity of use, which is why the values of *facilitating conditions* are closely grouped with the maximum value.

The final multiple linear regression model for *behavioural intention (BI)* is constructed with five variables according to the Eq. (7), since *effort expectancy* and *hedonic motivation* are not statistically significant.

$$BI = -1.339 + 0.398FC + 0.369HA + 0.221PE + 0.153PV + 0.143SI \quad (7)$$

Facilitating conditions (FC) and *habit (HA)* influence *behavioural intention* the most with an almost identical increase of the *behavioural intention* by 0.398 and 0.369 units with an increase of the mentioned variables by one unit, thus affirming *habit* as one of the main motivators. However, attention is shifted to *facilitating conditions* that did not show such a significant impact on the *behavioural intention* in the analysis of the electronic programme guide and teletext. Therefore, the determined influence of *facilitating conditions* should be treated with caution, given the frequencies of the occurrence of its values. A look into descriptive statistics shows that this variable takes most of its values at a very narrow interval of 6 to 7. The arithmetic mean is 6.43 and the upper quartile is 7. Therefore, the set of remaining values that this variable did not have a significant effect on is the result of regression. The standard deviation of the *facilitating conditions* variable is very low compared to all the remaining variables and is 0.950, which is almost twice the standard deviation of the *habit* variable whose value is 1.615. All of the above indicates that due to the imperfection of the mathematical instrument, the influence of the variable of *facilitating conditions* was overestimated and an additional check was performed by calculating the standardized correlation coefficients that reduce the effect of aggregating the value of the variables at a narrow interval. For the variable of *facilitating conditions*, the standardized coefficient is b* = 0.267, while for the variable of *habit*, the standard coefficient equals b* = 0.412. This shows that the variable of *habit* has a much greater influence on the *behavioural intention* than the variable of *facilitating conditions*. Such a statistical case is specific only to the case of Internet portals and applications, because in the case of the electronic programme guide and teletext data, variables have more uniform and very similar values of standard deviations. The influence on the *behavioural intention* is followed by *performance expectancy, price value* and *social influence.* The coefficient of determination is $R^2 = 0.801$, and it indicates that this model can explain as much as 80.1% of the variance.

The regression analysis for *user behaviour*, i.e. the use of Internet portals and applications, was carried out in two steps and an initial multiple linear regression model with three dependent variables according to the UTAUT2 model and an improved, final multiple linear regression model were constructed. The initial model construction showed that the variables of *facilitating conditions* and *behavioural intention* only slightly affect *use behaviour* and are not statistically representative and, moreover, that *use behaviour* is statistically significantly influenced by *habit*. Therefore, the final and improved constructed regression model consists of only one independent variable – *habit*, according to the Eq. (8)., which means that an increase of *habit (HA)* for a single unit causes an increase of *use behaviour (UB)* for 0.536 units.

$$UB = 2.929 + 0.536HA \quad (8)$$

In this model, the determination coefficient R2 has a somewhat lower value of $R^2 = 0.429$. Thus, this model can interpret slightly less than half of the variance. The obtained multiple linear regression model is therefore not of the highest quality, but is still an acceptable tool for interpreting the influence of independent variables on the value of the *use behaviour* variable.

Conclusions

The research presented in this paper has identified that 55.5% of the respondents primarily use the electronic programme guide when they need a solution that will give them information about the television programme schedule, although it is readily available on every television set; while 23.1% of the respondents primarily use the teletext, 15.5% primarily use specialised Internet portals and applications, while less than 6% still primarily use printed programme guides in daily newspapers or specialised magazines. The evaluation of the motivation factors for the use of the electronic programme guide, teletext and Internet portals and applications was conducted by using a UTAUT2-based research model to construct multiple linear regression models for the variables of *behavioural intention* that represents the respondent's intention to use the solution and *use behaviour* which represents the actual use of the solution. The research model provides precise results in the case of the *behavioural intention* estimation, since it explained 89.6% of the variance in the case of the electronic programme guide, 71.0% in the case of teletext and 80.1% in the case of the subset of data of Internet portals and applications. The main motivators for the *behavioural intention* to use either of the solutions are *habit* and *performance expectancy*, which in essence means that the more habit the users developed for using the solution and the more they expected the solution to increase their efficiency in solving their need, the more they intended to use it. Less important, but still significant motivators are *price value* in the case of the electronic programme guide and Internet portals and applications, which implies that the users of those solutions intend to use them more if they perceive them to provide a good value for money; and *social influence* in the case of the teletext and Internet portals and applications, indicating that the users of teletext and Internet are somewhat under the influence of the people whose opinion is important to them. In the case of estimating *use behaviour,* i.e. the actual use of the solution, the UTAUT2 research model considers only three independent variables and it explained 78.4% of the variance in the case of the electronic programme guide with N=243 respondents, 52.2% of the variance in the case of teletext with N=82 respondents and 42.9% in the case of Internet portals and applications with N=72 respondents. Although the research model ex-

plained only around half of the variance in the case of teletext and Internet portals and applications, it is still statistically representative and provides an acceptable interpretation of *use behaviour*. The single most dominant motivator for all solutions is *habit*, implying that users are more likely to select a solution which they got used to. In the case of the electronic programme guide, the important motivator is *facilitating conditions*, which indicates that television viewers appreciate the omnipresence of the electronic programme guide. The habit of using the electronic programme guide is indicated not only by a direct relation of *habit* to *use behaviour*, but also through the *behavioural intention* to use the electronic programme guide, which is most significantly influenced by *habit*. The results also indicate that users perceive the electronic programme guide as quick, reliable and easy to use. The corresponding motivators of *performance expectancy* and *effort expectancy* both have a strong correlation with *habit*, i.e. the frequent use of the electronic programme guide. Therefore, we can conclude that *habit* is also the main motivator for the use of the electronic programme guide, as well as teletext and Internet portals and applications as the other solutions that users select when they need information about the programming schedule.

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