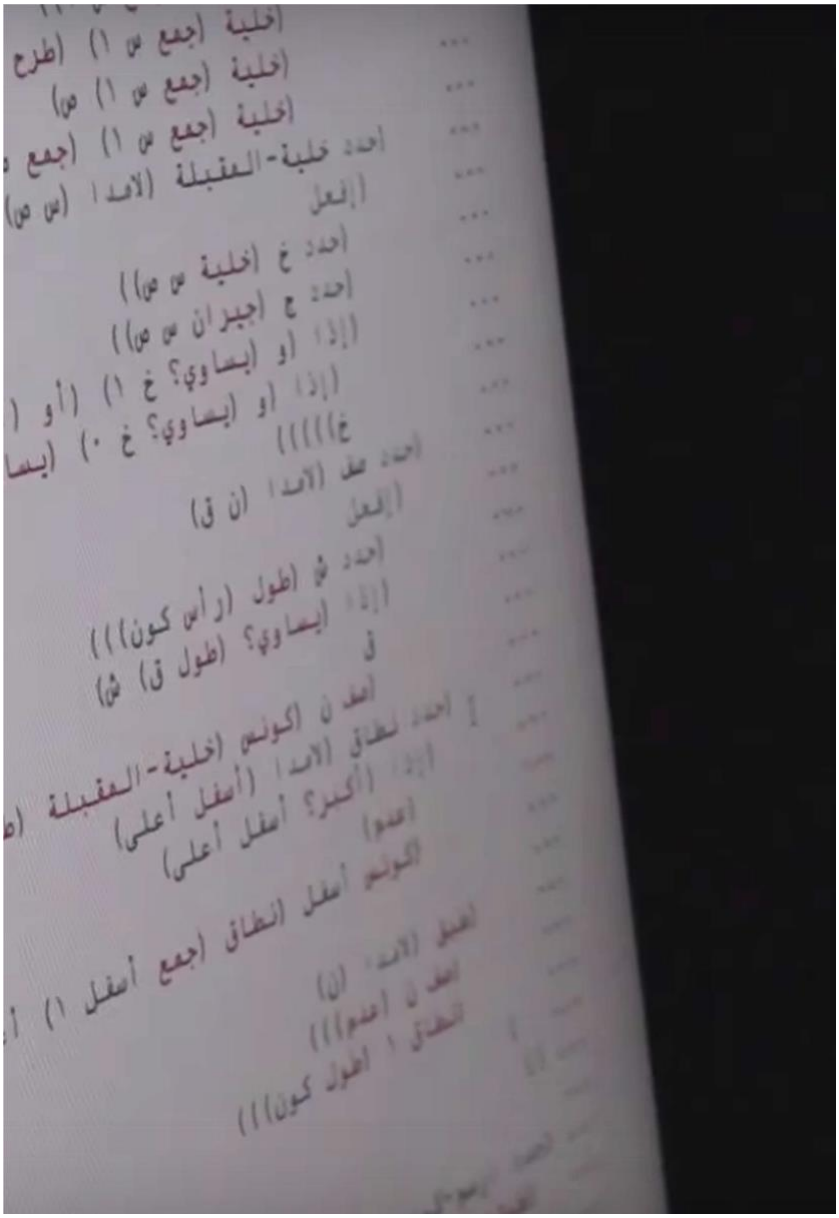

INTERNATIONALIZATION

A guide to enable the design and development of games and applications for the international market

ABSTRACT

A guide describing the design considerations required to provide localization support for different languages and writing systems in videogames and applications whilst also describing the different cultural and religious restrictions in major areas in the world which could obstruct releasing an application or game in that area in of the world.

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INTRO

Digital distribution of videogames gives the developers access to a significant larger target audience, given they have an internet connection. This increased access means developers will come across many varying laws and local customs in the countries their customers live in. Even within countries different states and provinces could have different laws and customs. Take Canada for instance with Quebec as a French-speaking province which has different local legislation than the surrounding English-speaking provinces. Different countries have varying standards. While some content may be legal in most countries, they may be frowned upon or even illegal in others. When providing a build of a game or application to the publisher or distributor the developer should trust their contact person and rely on his or her expertise. Nonetheless developers should take many steps into account before publishing applications to other countries. Naturally it's more favourable to be prepared for the international market at the start of your process than to find out at the final stage of the development pipeline that you have to alter your content according to your distributor.

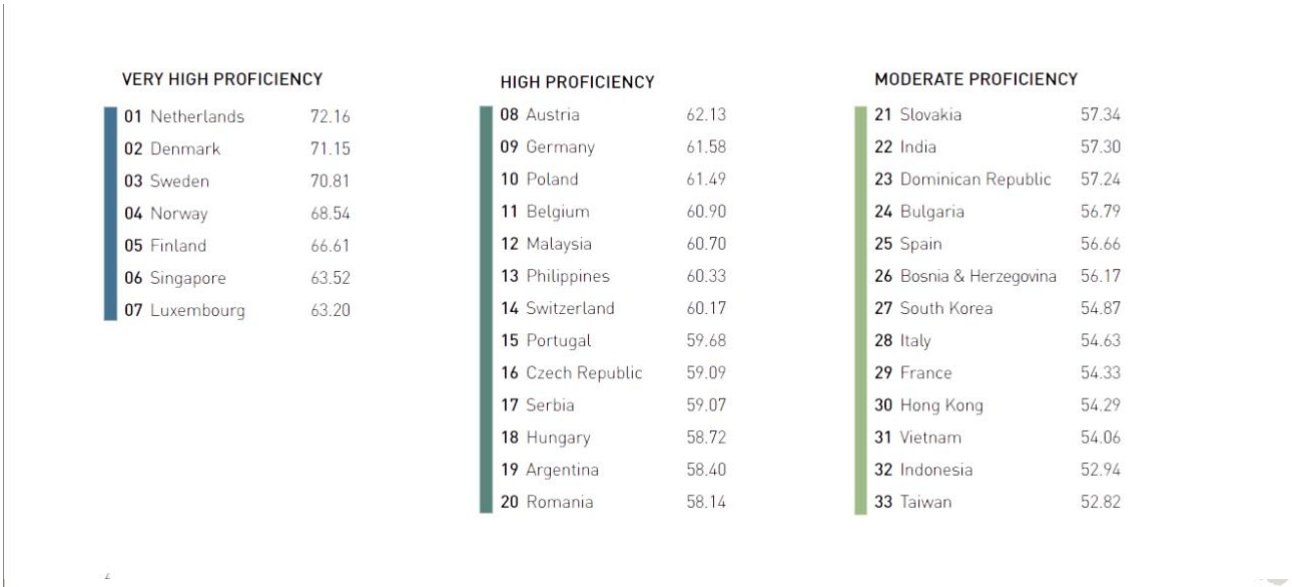
LOCALIZATION

Localization has an undisputable positive influence on your game sales since it will be accessible to a larger target audience than when your game only supports one language. If potential customers are in search for a new game to play or software to download they will be more likely to end up on your content due to your localization efforts. There is an evident correlation between localization and increase of revenue generated in the targeted markets. According to a study by "*App Annie*" (Back then "*Distimo*") on the immediate impact of adding native language on 200 iPhone applications and games, applications and games enjoyed a 128% boost in downloads and a 26% increase in revenue the week after the developers introduced local language support. As reported by "*Defender's Quest*" developer Lars Doucet on Gamasutra his game experienced a noticeable increase of sales after localizing "*Defender's Quest*". Before translating his game, the Japanese sales made up 1.04% of the sales while after the translation it made up 5.69%. Korean increased from 2.54% to 6.29%, German from 8.56% to 10.02% and Russian from 6.38% to 7.78%. The author argued that these sales would not have been made if they did not localize their games.

TO LOCALIZE OR NOT?

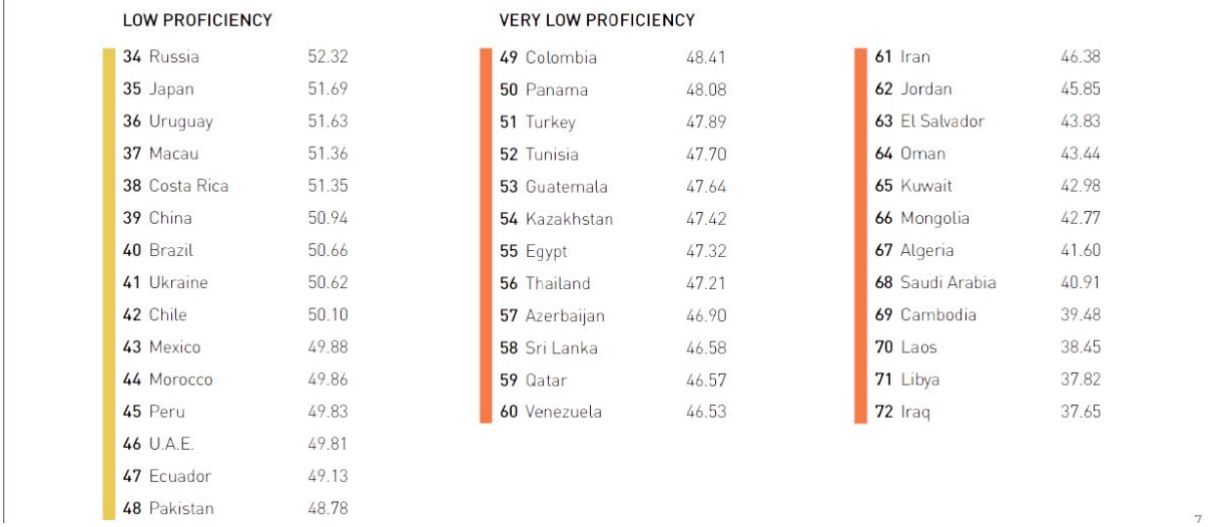
Whether one should localize their game or not is something the developers themselves should figure out. Costs of translating text files differ from $0,10 to $0,20 per word per language. However, localization isn't just changing text files, before the developer is able to ship its content to certain areas in the world one should

take into account the different cultural values and local laws are apparent in the global market. UI changed might be needed depending on the language used. Therefor developers might want to compare the English Proficiency Index with the amount potential customers to make a calculation on whether they want to localize their game to the native language.



VERY HIGH PROFICIENCY		HIGH PROFICIENCY		MODERATE PROFICIENCY	
01 Netherlands	72.16	08 Austria	62.13	21 Slovakia	57.34
02 Denmark	71.15	09 Germany	61.58	22 India	57.30
03 Sweden	70.81	10 Poland	61.49	23 Dominican Republic	57.24
04 Norway	68.54	11 Belgium	60.90	24 Bulgaria	56.79
05 Finland	66.61	12 Malaysia	60.70	25 Spain	56.66
06 Singapore	63.52	13 Philippines	60.33	26 Bosnia & Herzegovina	56.17
07 Luxembourg	63.20	14 Switzerland	60.17	27 South Korea	54.87
		15 Portugal	59.68	28 Italy	54.63
		16 Czech Republic	59.09	29 France	54.33
		17 Serbia	59.07	30 Hong Kong	54.29
		18 Hungary	58.72	31 Vietnam	54.06
		19 Argentina	58.40	32 Indonesia	52.94
		20 Romania	58.14	33 Taiwan	52.82

FIGURE 2 - ENGLISH PROFICIENCY OF TOP 33 COUNTRIES



LOW PROFICIENCY		VERY LOW PROFICIENCY			
34 Russia	52.32	49 Colombia	48.41	61 Iran	46.38
35 Japan	51.69	50 Panama	48.08	62 Jordan	45.85
36 Uruguay	51.63	51 Turkey	47.89	63 El Salvador	43.83
37 Macau	51.36	52 Tunisia	47.70	64 Oman	43.44
38 Costa Rica	51.35	53 Guatemala	47.64	65 Kuwait	42.98
39 China	50.94	54 Kazakhstan	47.42	66 Mongolia	42.77
40 Brazil	50.66	55 Egypt	47.32	67 Algeria	41.60
41 Ukraine	50.62	56 Thailand	47.21	68 Saudi Arabia	40.91
42 Chile	50.10	57 Azerbaijan	46.90	69 Cambodia	39.48
43 Mexico	49.88	58 Sri Lanka	46.58	70 Laos	38.45
44 Morocco	49.86	59 Qatar	46.57	71 Libya	37.82
45 Peru	49.83	60 Venezuela	46.53	72 Iraq	37.65
46 U.A.E.	49.81				
47 Ecuador	49.13				
48 Pakistan	48.78				

FIGURE 1 – ENGLISH PROFICIENCY OF 38 COUNTRIES RANKED FROM LOW TO VERY LOW

LOCALIZATION OR INTERNATIONALIZATION

"Localization" is defined as making content of a game adaptable to meet the cultural, lingual and local regulations of a specific region.

Is my game adjusted for the local market I'm distributing to? Can the target audience understand my and play my game easily?

When localizing a game, one has to take many things into account such as;

- Date and time formats
- Reading direction
- Keyboard usage and shortcuts
- References to objects, actions or ideas which, in certain cultures, may be subject to misinterpretation or viewed as insensitive.
- Legal requirements

The main purpose of localization is to adapt the look and feel of the game for the audience that it meets their requirements.

"Internationalization" is the process of designing and developing a game such that it enables localization for *any* given culture, region, or language.

Is the game able to handle different character sets, will it be able to handle a right to left lay-out?

With Internationalization, the developer makes sure his game can *"travel around the world"*.

Figure 3 - *An example of a game which is not "internationalized" the developers did not create the textboxes to handle the Arabic script and therefor the translated text turns into unreadable gibberish.*

Figure 4 - *An example of a game which is not "localized" properly, the translators lacked context of the text they needed to translate and therefor made many mistakes. In this particular screenshot, you see how the translation team confused the verb "to train" with the noun "train" leading to an incoherent dialogue.*

This guide assists companies and independent developers with the localization of games and applications. It contains detailed information about different languages, writing systems and descriptions on accepted and censored content in the six geographical areas in the world.

For this research, we divided the world in six geographical regions; North America (NAM), Western Europe(W-EU), Eastern Europe(E-EU), Middle East & Africa(MEA), Asia-Pacific(APAC) and Latin America(LATAM)

Region	Share of 2016 Global Revenue	Total game revenue (2016)	Population	Gamers	Most common writing systems
NAM	25.5%	$25.4Bn	360.405.000	198.051.000	Alphabetic
W-EU	17.4%	$17.3Bn	404.489.000	184.627.000	Alphabetic
E-EU	3.0%	$3.0Bn	353.057.000	152.528.000	Alphabetic
MEA	3.2%	$3.2Bn	1.626.140.000	301.364.000	Abjad, Alphabetic, Abugida
APAC	46.8%	$46.6Bn	4.008.219.000	1.053.047.000	Logographic, Syllabic, Abugida, Alphabetic
LATAM	4.1%	$4.1Bn	639.584.000	209.008.000	Alphabetic

There are four writing systems currently used in the world;

- Alphabetic (Latin, Cyrillic, Greek, Armenian, Georgian and Hangul)
- Logographic and Syllabic (Hanzi, Kana and Kanji)
- Abjad (Arabic and Hebrew)
- Abugida (North-Indic, South-Indic, Ethiopic, Thaana and Canadian syllabic)

The top 5 most spoken languages are Standard Chinese *(Logographic and Syllabic),* English *(Alphabetic)*, Spanish *(Alphabetic)*, Arabic *(Abjad)* and Hindi *(Abugida)* covering all four writing systems.

NETWORKED READINESS INDEX - NRI

The Networked Readiness Index - NRI measures countries' preparedness to obtain the benefits of emerging technologies and capitalize on the opportunities presented by the digital transformation. The Global Information Technology Report 2016 assesses the factors, policies, and institutions that enable a country to fully leverage information and communication technologies (ICTs) for increased prosperity and crystallizes them into a global ranking of networked readiness at the country level in the form of the NRI. In this document, we provide the rank of each mentioned country to indicate their readiness for the transition to a new set of systems bringing together digital, biological and physical technologies in new combinations.

1. NORTH AMERICA (NAM)

Population	Online population	Gamers	Game Revenue (2016)	Share of Global Revenue (2016)	Game rating system	Language(s)	Script(s)	EF EPI Average:
360.4M	*326.4M*	*198.0M*	*25.4Bn*	*25,5%*	*PEGI, ESBR*	*English, French*	*Alphabetical*	*N/A*

North America covers an area of about 24,709,000 square kilometres and has 360 million inhabitants with 90,57% of its population connected to the internet. 198 million gamers live in North America and are responsible for 25.5% of the global game revenue. The United States is ranked 5th on the NRI. Canada is ranked 14th. Both Canada and The United States are high-income economies according to the World Bank as stated on the official website in 2017. North America has experienced a year-over-increase in revenue of 4.1% in 2015 – 2016 and an increase of 4.0% in 2016 – 2017.

GOVERNMENT AND LEGISLATION

What is the impact and influence of the government on the ICTs used in the country.

GOVERNMENT SUCCESS IN ICT PROMOTION

How successful is the government in promoting the use of Information and Communications Technology. (2014 – 2015)

[1 = not successful at all; 7 = extremely successful]

	Global Rank	**Value (Mean: 4.1)**
United States	25	4.8
Canada	38	4.5

IMPORTANCE OF ICTS TO GOVERNMENT VISION OF THE FUTURE

To what extent does the government have a clear implementation plan for utilizing ICTs to improve the country's overall competitiveness. (2014 – 2015)

[1 = not at all – there is no plan; 7= to a great extent – there is a clear plan]

	Global Rank	**Value (Mean: 4.0)**
United States	29	4.7
Canada	49	4.3

EFFECTIVENESS OF LAW-MAKING BODIES

How effective is the legislative process in the countries. (2014 – 2015)

[1 = not effective at all – it is deadlocked; 7 = extremely effective]

	Global Rank	**Value (Mean: 3.8)**
United States	49	4.0
Canada	13	5.3

LAWS RELATING TO ICTS

How developed are the country's laws relating to the use of ICTs (e.g., e-commerce, digital signatures, consumer protection). (2014 – 2015)

[1 = not developed at all; 7 = extremely developed]

	Global Rank	Value (Mean: 3.9)
United States	11	5.3
Canada	13	5.1

INTELLECTUAL PROPERTY PROTECTION

To what extent is intellectual property protected. (2014 – 2015)

[1 = not at all; 7 = to a great extent]

	Global Rank	Value (Mean: 4.3)
United States	15	5.8
Canada	12	5.8

GOVERNMENT PROCUREMENT OF ADVANCED TECHNOLOGY PRODUCTS

To what extent do government purchasing decisions foster innovation.

(2014 – 2015)

[1 = not at all; 7 = to a great extent]

	Global Rank	**Value (Mean: 3.4)**
United States	11	4.3
Canada	55	3.5

BUSINESSES

How well adapted are the country's businesses towards ICTs.

BUSINESS-TO-CONSUMER INTERNET USE

To what extent do businesses use the Internet for selling their goods and services to consumers. (2014 – 2015)

[1 = not at all; 7 = to a great extent]

	Global Rank	**Value (Mean: 4.5)**
United States	2	6.3
Canada	13	5.7

CAPACITY FOR INNOVATION

To what extent do companies have the capacity to innovate. (2014 – 2015)

[1 = not at all; 7 = to a great extent]

	Global Rank	**Value (Mean: 4.1)**
United States	2	5.9
Canada	23	4.9

FIRM-LEVEL TECHNOLOGY ABSORPTION

To what extent do businesses adopt to new technology. (2013 – 2014)

[1 = not at all; 7 = adopt extensively]

	Global Rank	**Value (Mean: 4.7)**
United States	3	6.1
Canada	29	5.4

CONSUMERS

How do consumers relate to new ICTs? How many are connected to the Internet?

HOUSEHOLDS WITH A PERSONAL COMPUTER

Percentage of households equipped with a personal computer. (2014)

	Global Rank	Value
United States	28	81.5%
Canada	15	87.6%

HOUSEHOLDS WITH INTERNET ACCESS

Percentage of households with internet access at home. (2014)

	Global Rank	Value
United States	29	79.6%
Canada	18	86.6%

INTERNET USERS

Percentage of individuals in a country that use the Internet. (2014)

	Global Rank	Value
United States	13	87.4%
Canada	14	87.1%

FIXED BROADBAND INTERNET SUBSCRIPTIONS

Fixed broadband Internet subscribers per 100 population. (2014)

	Global Rank	Value
United States	18	31.1
Canada	11	35.4

MOBILE BROADBAND INTERNET SUBSCRIPTIONS

Mobile broadband Internet subscribers per 100 population. (2014)

	Global Rank	Value
United States	14	102.7
Canada	52	54.3

USE OF VIRTUAL SOCIAL NETWORKS

How widely are social networks used (e.g., Facebook, Twitter). (2014 – 2015)

[1 = not at all; 7 = used extensively]

	Global Rank	Value (Mean: 5.5)
United States	3	6.6
Canada	18	6.2

AVAILABILITY OF LATEST TECHNOLOGIES

To what extent are the latest technologies available. (2014 – 2015)

[1 = not at all; 7 = to a great extent]

	Global Rank	Value (Mean: 4.8)
United States	2	6.5
Canada	11	6.2

SOFTWARE PIRACY RATE

Unlicensed software unites as a percentage of total software units installed. (2013)

	Global Rank	Value
United States	1	18%
Canada	14	25%

IMPACT OF ICTS ON ACCESS TO BASIC SERVICES

To what extent do information and communication technologies enable access for all individuals to basic services (e.g., health, education, financial services, etc). (2014 – 2015)

[1 = not at all; 7 = to a great extent]

	Global Rank	**Value (Mean: 4.3)**
United States	15	5.7
Canada	12	5.8

CULTURAL SENSITIVITY AND LOCAL RULES PROHIBITING CONTENT

The organisation classifying games and assigning age and content ratings in the US and Canada is the "*Entertainment Software Rating Board*" – ESRB (http://www.esrb.org). Only the Canadian province of Quebec uses the Pan European Game Information - PEGI (http://www.pegi.info/en/index/)[1].

US

The ESRB system is enforced via the voluntary leverage of the retail industries; most stores do not stock games that have not been rated by the ESRB. Furthermore, console manufacturers will not license games for their systems unless they carry ESRB ratings and are therefore de facto banned. The ESRB ratings system is not enforced under federal laws in the United States since videogames are protected under first amendment.

Canada

Whether the ESRB system is enforced by law or via the voluntary leverage of the retail industries and console manufacturers differs per province. Some provinces enforce the ESRP system whilst others don't. The predominantly French-speaking province Quebec uses the European system PEGI for its content ratings.

[1] The reason for this is because Quebec has a predominantly French-speaking population and uses French as its' sole official language unlike other Canadian provinces which all have English as their official language.

LANGUAGE

The most common languages used in North America are English, Spanish, French. With Spanish mostly spoken by the large Latin-American communities living in America and French solely spoken by most people in the province of Quebec. The difference between Canadian French and formal French is not noticeable in writings but only when speaking. Canada houses roughly 12 million French speakers which is about 22% of the Canadian population.

The Latin Script (Alphabetical writing system)

The writing system commonly used in North America is the Latin Alphabetical Writing System. The Latin alphabet is the most common alphabet used in the world. Alphabets, or phonemic alphabets are sets of letters that represent consonants and vowels as pictured below.

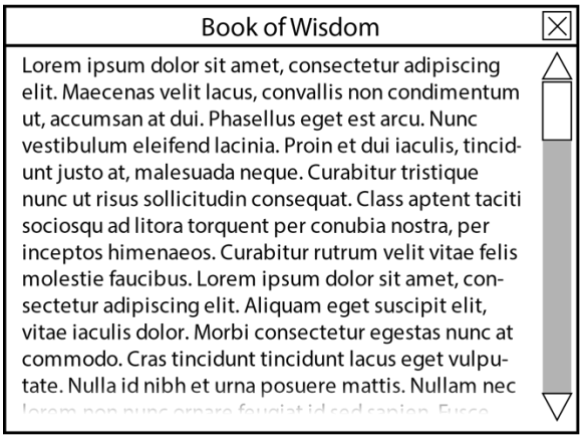


FIGURE 5 – EXAMPLE OF THE ALPHABETICAL SCRIPT IN A TEXTBOX

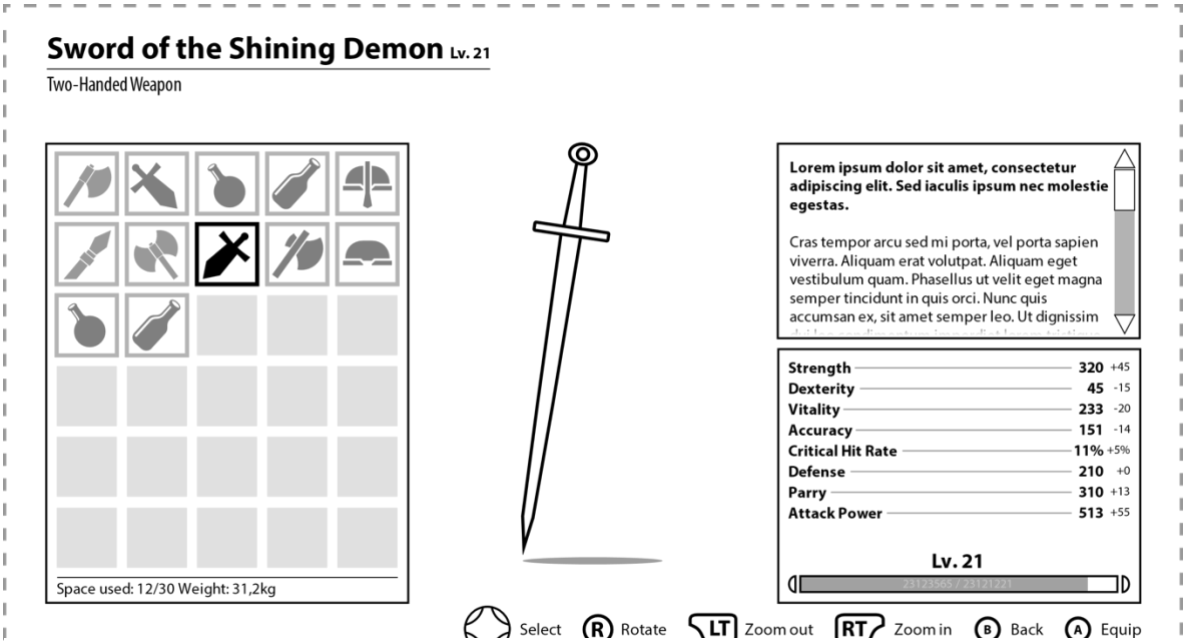


FIGURE 6 – AN EXAMPLE OF THE ALPHABETICAL SCRIPT IN A USER INTERFACE

2. WESTERN EUROPE (W-EU)

Population	Online population	Gamers	Game Revenue (2016)	Share of Global Revenue (2016)	Game rating system	Language(s)	Script(s)	EF EPI Average: *(Excluding the UK)*
404.5M	*348.2M*	*184.6M*	*17.3Bn*	*17.4%*	*PEGI, USK, BBFC*	*German, French, English, Italian, Spanish*	*Alphabetical*	*57.05*

Western Europe (W-EU) is the region covering the western part of Europe. The online population of Western Europe consists of 348 million people responsible for 17,5% of the global market share. The five countries in this region with the highest revenues are Germany, which is also the 5th largest games market worldwide and the leader in Western Europe with $4 billion in revenues. The United Kingdom is second with revenues of $3.8 billion, followed by France with $2,7 billion, Spain with a revenue of $1,8 billion, and Italy with $1.7 billion.

The region's 404.5 million games spent a total of $17.3 billion this year making up 17.7% of the global revenues. Western Europe has experienced a year-over-increase in revenue of 4.4% in 2015 – 2016 and an increase of 4.8% in 2016 – 2017. Germany is ranked 15th on the NRI. The United Kingdom is ranked 8th. France is ranked 24th. Spain is ranked 35th. Italy is ranked 45th. All previously mentioned countries are high-income economies according to the World Bank as stated on the official website in 2017.

GOVERNMENT AND LEGISLATION

What is the impact and influence of the government on the ICTs used in the country.

GOVERNMENT SUCCESS IN ICT PROMOTION

How successful is the government in promoting the use of Information and Communications Technology. (2014 – 2015)

[1 = not successful at all; 7 = extremely successful]

	Global Rank	**Value (Mean: 4.1)**
Germany	32	4.7
United Kingdom	15	4.9
France	37	4.5
Spain	80	3.9
Italy	126	3.1

IMPORTANCE OF ICTS TO GOVERNMENT VISION OF THE FUTURE

To what extent does the government have a clear implementation plan for utilizing ICTs to improve the country's overall competitiveness. (2014 – 2015)

[1 = not at all – there is no plan; 7= to a great extent – there is a clear plan]

	Global Rank	**Value (Mean: 4.0)**
Germany	24	4.7
United Kingdom	16	4.9
France	42	4.4
Spain	80	3.7
Italy	108	3.3

EFFECTIVENESS OF LAW-MAKING BODIES

How effective is the legislative process in the countries. (2014 – 2015)

[1 = not effective at all – it is deadlocked; 7 = extremely effective]

	Global Rank	**Value (Mean: 3.8)**
Germany	17	5.0
United Kingdom	5	5.7
France	21	4.8
Spain	48	4.1
Italy	128	2.5

LAWS RELATING TO ICTS

How developed are the country's laws relating to the use of ICTs (e.g., e-commerce, digital signatures, consumer protection). (2014 – 2015)

[1 = not developed at all; 7 = extremely developed]

	Global Rank	Value (Mean: 3.9)
Germany	26	4.8
United Kingdom	6	5.5
France	17	5.1
Spain	36	4.6
Italy	71	3.9

INTELLECTUAL PROPERTY PROTECTION

To what extent is intellectual property protected. (2014 – 2015)

[1 = not at all; 7 = to a great extent]

	Global Rank	Value (Mean: 4.3)
Germany	20	5.7
United Kingdom	7	6.0
France	14	5.8
Spain	62	4.0
Italy	58	4.1

GOVERNMENT PROCUREMENT OF ADVANCED TECHNOLOGY PRODUCTS

To what extent do government purchasing decisions foster innovation.

(2014 – 2015)

[1 = not at all; 7 = to a great extent]

	Global Rank	**Value (Mean: 3.4)**
Germany	10	4.3
United Kingdom	34	3.8
France	19	4.0
Spain	84	3.2
Italy	113	2.8

BUSINESSES

How well adapted are the country's businesses towards ICTs.

BUSINESS-TO-CONSUMER INTERNET USE

To what extent do businesses use the Internet for selling their goods and services to consumers. (2014 – 2015)

[1 = not at all; 7 = to a great extent]

	Global Rank	**Value (Mean: 4.5)**
Germany	12	5.8
United Kingdom	1	6.4
France	23	5.5
Spain	45	4.9
Italy	59	4.7

CAPACITY FOR INNOVATION

To what extent do companies have the capacity to innovate. (2014 – 2015)

[1 = not at all; 7 = to a great extent]

	Global Rank	Value (Mean: 4.1)
Germany	5	5.6
United Kingdom	10	5.4
France	20	5.1
Spain	55	4.1
Italy	37	4.5

FIRM-LEVEL TECHNOLOGY ABSORPTION

To what extent do businesses adopt to new technology. (2013 – 2014)

[1 = not at all; 7 = adopt extensively]

	Global Rank	Value (Mean: 4.7)
Germany	13	5.7
United Kingdom	14	5.7
France	26	5.5
Spain	50	4.9
Italy	106	4.2

CONSUMERS

How do consumers relate to new ICTs? How many are connected to the Internet?

HOUSEHOLDS WITH A PERSONAL COMPUTER

Percentage of households equipped with a personal computer. (2014)

	Global Rank	Value
Germany	11	90.6%
United Kingdom	10	90.8%
France	24	82.8%
Spain	39	74.0%
Italy	40	74.0%

HOUSEHOLDS WITH INTERNET ACCESS

Percentage of households with internet access at home. (2014)

	Global Rank	Value
Germany	15	89.5%
United Kingdom	12	89.9%
France	20	83.0%
Spain	37	74.4%
Italy	39	72.6%

INTERNET USERS

Percentage of individuals in a country that use the Internet. (2014)

	Global Rank	Value
Germany	16	86.2%
United Kingdom	8	91.6%
France	23	83.8%
Spain	30	76.2%
Italy	52	62.0%

FIXED BROADBAND INTERNET SUBSCRIPTIONS

Fixed broadband Internet subscribers per 100 population. (2014)

	Global Rank	Value
Germany	10	35.8
United Kingdom	7	37.4
France	4	40.2
Spain	27	27.3
Italy	36	23.5

MOBILE BROADBAND INTERNET SUBSCRIPTIONS

Mobile broadband Internet subscribers per 100 population. (2014)

	Global Rank	Value
Germany	39	63.6
United Kingdom	17	88.8
France	37	66.3
Spain	25	77.3
Italy	28	70.9

USE OF VIRTUAL SOCIAL NETWORKS

How widely are social networks used (e.g., Facebook, Twitter). (2014 – 2015)

[1 = not at all; 7 = used extensively]

	Global Rank	Value (Mean: 5.5)
Germany	54	5.8
United Kingdom	5	6.5
France	45	5.9
Spain	69	5.6
Italy	35	6.0

AVAILABILITY OF LATEST TECHNOLOGIES

To what extent are the latest technologies available. (2014 – 2015)

[1 = not at all; 7 = to a great extent]

	Global Rank	Value (Mean: 4.8)
Germany	12	6.2
United Kingdom	5	6.5
France	21	6.0
Spain	34	5.5
Italy	49	5.1

SOFTWARE PIRACY RATE

Unlicensed software unites as a percentage of total software units installed. (2013)

	Global Rank	Value
Germany	9	24%
United Kingdom	9	24%
France	22	36%
Spain	31	45%
Italy	33	47%

IMPACT OF ICTS ON ACCESS TO BASIC SERVICES

To what extent do information and communication technologies enable access for all individuals to basic services (e.g., health, education, financial services, etc). (2014 – 2015)

[1 = not at all; 7 = to a great extent]

	Global Rank	**Value (Mean: 4.3)**
Germany	14	5.8
United Kingdom	19	5.7
France	25	5.4
Spain	36	5.0
Italy	89	3.9

CULTURAL SENSITIVITY AND LOCAL RULES PROHIBITING CONTENT

In order to classify videogames, the "*Pan European Game Information*" (PEGI) was established. PEGI was developed by the Interactive Software Federation of Europe (ISFE) in order to replace numerous national age rating systems with a single unified European content rating system. The system is now in use in more than thirty-one European countries. Whether the PEGI system is enforceable or voluntarily differs per country.

Germany

Germany is the major game market in Europe housing millions of gamers and several large game developers. Severe regulations however impact the content enjoyed by those gamers heavily. Many developers have to cut an immense amount of content before their product is eligible for publishing in Germany. The limitations imposed by the German law might scare off many developers from publishing their game in Germany but since Germany is the leading country in Europe this is a step many developers take. However, some choose not to publish their game in Europe; Microsoft for instance chose not publish their game *"Gears of War 2"* in Germany since cutting content so it would fit the German guidelines so it would be less gruesome and violent would make the game unplayable.
In order to publish one's game in Germany one should obtain a certificate given by the *"Unterhaltungssoftware Selbstkontrolle"* – USK (http://www.usk.de/en/). Restrictions per age restriction are provided on the organization's website. The USK will refuse the certification of a title if it has content that is not acceptable in any of the age restrictions. If a content creator decides not to censor its work and decides to distribute the content online the USK will put them in the so-called "index", a *"List of media harmful to young people"*. The consequences of ones work being put on the list are described in §15 in the *"Law for the protection of minors"* (*Jugendschutzgesetz*);

1. The material shall not be sold, provided or otherwise made accessible to minors.

2. The material may not be exhibited where it can be seen by minors. This includes gameplay streamed over the internet.
3. The material can only be sold in a shop in an area accessible only to adults. Meaning it is illegal to sell the content online delivering it by mail since children can accept the package. However, it is permissible if the package is handed over to an adult who has a present identification.
4. The material imported by mail order. In this case, an adult buyer (importer) is not subject to punishment, if he himself has no aims of further distribution it to others.
5. The game must not be rented out, except in a shop which is inaccessible to minors.
6. The material may not be advertised or announced in a place where the announcement or advertisement could be seen by minors.
7. If it is for one of the above six causes, production, acquiring, and holding in store are subject to penalty, too.

Indexed games in the lists A and C can be advertised and sold to adults via the internet if it can be ensured that minors do not have access to the content. Games on the lists B and D however, may not be distributed or broadcasted, including the internet.

Prohibited content which results in the refusal of the certification of a title;

- Depictions of pornographic acts involving violence, animals, adolescents and/or children
- Content denying the Holocaust

- Propaganda material for forbidden organisations
- Depictions of symbols of the National Socialist regime
- Glorification of violence

UK

When publishing content in the United Kingdom the product has to be certified by the "*BBFC", the "British Board of Film Certification"* http://www.bbfc.co.uk). When one submits a work, which raises concerns to the board that can't be addressed by classification at a particular age, the BBFC is able to require cuts or other changes as a condition of the classification. This will mostly happen when material contains;

- Content which might encourage criminal activity
- Content which is obscene or otherwise illegal
- Content created by the means of the commission of a criminal offense
- Content with portrayals of children in a sexualized or abusive context
- Content which normalises sexual or sadistic violence
- Images of real injury, violence or death presented in a salacious or sensationalist manner which risks harm by encouraging insensitive or sadistic attitudes
- Content which reinforces the suggestions that victims enjoy sexual violence
- Content which invites viewer involvement in sexual violence or other harmful violent activities
- Sex works which contain material listed as unacceptable at R18;
    - Material which is in breach of the criminal law, including material judged to be obscene under the current interpretation of the Obscene Publications Act 1959

- Material (including dialogue) likely to encourage an interest in sexually abusive activity which may include adults role-playing as non-adults
- The portrayal of sexual activity which involves real or apparent lack of consent. Any form of physical restraint which prevents participants from indicating a withdrawal of consent
- The infliction of pain or acts which may cause lasting physical harm, whether real or (in a sexual context) simulated. Some allowance may be made for moderate, non-abusive, consensual activity
- Penetration by any object associated with violence or likely to cause physical harm
- Sexual threats, humiliation or abuse which do not form part of a clearly consenting role-playing game. Strong physical or verbal abuse, even if consensual, is unlikely to be acceptable

When the boards suspect the content to be in violation with the guidelines one will be given an opportunity to present evidence before a final decision is reached. As a last resort, the BBFC may refuse to classify a work, in line with the objective of preventing non-trivial harm risks to potential viewers and players and therefor through their behaviour the British society.

France

PEGI classification on games is mandatory in France. Games that are not classified cannot be sold in France.

Spain

Spain officially supports PEGI and is represented in the PEGI Council, but there is no specific legislative basis enforcing the PEGI classifications.

Italy

PEGI is officially and is represented by Italy in its Council, but there is no specific legislative basis enforcing the PEGI classifications. The government mentioned banning games like Manhunt but was not supported by a majority of the parliament.

LANGUAGE

The Western European languages mostly fall within two Indo-European language groups the Romance languages derived from the Roman Empire and the Germanic languages. The most common languages spoken in Western Europe are German, French, English Italian and Spanish.

The Latin Script (Alphabetical writing system)

The alphabetical writing system is mainly used in Western Europe. Alphabets, or phonemic alphabets are sets of letters that represent consonants and vowels.

3. EASTERN EUROPE (E-EU)

Population	Online population	Gamers	Game Revenue (2016)	Share of Global Revenue (2016)	Game rating system	Language(s)	Script(s)	EF EPI Average:
353.0M	*249.0M*	*152.0M*	*3.0Bn*	*3.0%*	*PEGI*	*Russian, Ukrainian, Czech, Polish*	*Alphabetical, Alphabetical (Cyrillic)*	*56.45*

Eastern Europe, also known as East Europe is the eastern part of the European continent. Many descriptions of Eastern Europe exist today, but they are either extremely vague or are tremendously general. These definitions vary both across cultures and among experts. The population of Eastern Europe is around 353 million people with 70,55% of its population connected online. The five countries in this region with the highest revenues are Russia, Poland, Ukraine, the Czech Republic and Romania. Russia is ranked 41th on the NRI. Poland is ranked 42th. Ukraine is ranked 64th. The Czech Republic is ranked 36th. Romania is ranked 66th. Russia,

Poland and the Czech Republic are high-income economies. Romania is an upper-middle-income economy. Ukraine is a lower-middle-income according to the World Bank as stated on the official website in 2017. Eastern Europe has experienced a year-over-increase in revenue of 7.3% in 2015 – 2016 and an increase of 8.8% in 2016 – 2017.

GOVERNMENT AND LEGISLATION

What is the impact and influence of the government on the ICTs used in the country.

GOVERNMENT SUCCESS IN ICT PROMOTION

How successful is the government in promoting the use of Information and Communications Technology. (2014 – 2015)

[1 = not successful at all; 7 = extremely successful]

	Global Rank	**Value (Mean: 4.1)**
Russia	54	4.2
Poland	110	3.4
Ukraine	94	3.7
Czech Republic	101	3.6
Romania	113	3.4

IMPORTANCE OF ICTS TO GOVERNMENT VISION OF THE FUTURE

To what extent does the government have a clear implementation plan for utilizing ICTs to improve the country's overall competitiveness. (2014 – 2015)

[1 = not at all – there is no plan; 7= to a great extent – there is a clear plan]

	Global Rank	Value (Mean: 4.0)
Russia	76	3.8
Poland	111	3.3
Ukraine	122	3.1
Czech Republic	106	3.3
Romania	105	3.3

EFFECTIVENESS OF LAW-MAKING BODIES

How effective is the legislative process in the countries. (2014 – 2015)

[1 = not effective at all – it is deadlocked; 7 = extremely effective]

	Global Rank	Value (Mean: 3.8)
Russia	81	3.6
Poland	92	3.4
Ukraine	120	2.8
Czech Republic	96	3.3
Romania	106	3.1

LAWS RELATING TO ICTS

How developed are the country's laws relating to the use of ICTs (e.g., e-commerce, digital signatures, consumer protection). (2014 – 2015)

[1 = not developed at all; 7 = extremely developed]

	Global Rank	**Value (Mean: 3.9)**
Russia	75	3.8
Poland	68	3.9
Ukraine	74	3.8
Czech Republic	45	4.3
Romania	60	4.1

INTELLECTUAL PROPERTY PROTECTION

To what extent is intellectual property protected. (2014 – 2015)

[1 = not at all; 7 = to a great extent]

	Global Rank	Value (Mean: 4.3)
Russia	123	3.0
Poland	65	4.0
Ukraine	120	3.1
Czech Republic	34	4.6
Romania	72	3.9

GOVERNMENT PROCUREMENT OF ADVANCED TECHNOLOGY PRODUCTS

To what extent do government purchasing decisions foster innovation.

(2014 – 2015)

[1 = not at all; 7 = to a great extent]

	Global Rank	Value (Mean: 3.4)
Russia	67	3.3
Poland	91	3.1
Ukraine	98	3.0
Czech Republic	83	3.2
Romania	104	2.9

BUSINESSES

How well adapted are the country's businesses towards ICTs.

BUSINESS-TO-CONSUMER INTERNET USE

To what extent do businesses use the Internet for selling their goods and services to consumers. (2014 – 2015)

[1 = not at all; 7 = to a great extent]

	Global Rank	**Value (Mean: 4.5)**
Russia	35	5.1
Poland	41	5.0
Ukraine	36	5.1
Czech Republic	11	5.8
Romania	42	4.9

CAPACITY FOR INNOVATION

To what extent do companies have the capacity to innovate. (2014 – 2015)

[1 = not at all; 7 = to a great extent]

	Global Rank	Value (Mean: 4.1)
Russia	84	3.8
Poland	72	3.9
Ukraine	52	4.2
Czech Republic	26	4.8
Romania	63	4.0

FIRM-LEVEL TECHNOLOGY ABSORPTION

To what extent do businesses adopt to new technology. (2013 – 2014)

[1 = not at all; 7 = adopt extensively]

	Global Rank	Value (Mean: 4.7)
Russia	98	4.2
Poland	101	4.2
Ukraine	100	4.2
Czech Republic	48	5.0
Romania	80	4.4

CONSUMERS

How do consumers relate to new ICTs? How many are connected to the Internet?

HOUSEHOLDS WITH A PERSONAL COMPUTER

Percentage of households equipped with a personal computer. (2014)

	Global Rank	Value
Russia	43	71.0%
Poland	37	77.7%
Ukraine	63	52.4%
Czech Republic	34	78.5%
Romania	53	63.8%

HOUSEHOLDS WITH INTERNET ACCESS

Percentage of households with internet access at home. (2014)

	Global Rank	Value
Russia	41	69.9%
Poland	36	74.8%
Ukraine	72	43.0%
Czech Republic	31	78.0%
Romania	50	60.5%

INTERNET USERS

Percentage of individuals in a country that use the Internet. (2014)

	Global Rank	Value
Russia	40	70.5%
Poland	46	66.6%
Ukraine	80	43.4%
Czech Republic	27	79.7%
Romania	64	54.1%

FIXED BROADBAND INTERNET SUBSCRIPTIONS

Fixed broadband Internet subscribers per 100 population. (2014)

	Global Rank	Value
Russia	49	17.5
Poland	46	18.9
Ukraine	71	9.3
Czech Republic	23	27.9
Romania	47	18.5

MOBILE BROADBAND INTERNET SUBSCRIPTIONS

Mobile broadband Internet subscribers per 100 population. (2014)

	Global Rank	Value
Russia	38	65.8
Poland	51	55.7
Ukraine	121	7.5
Czech Republic	64	66.7
Romania	60	49.4

USE OF VIRTUAL SOCIAL NETWORKS

How widely are social networks used (e.g., Facebook, Twitter). (2014 – 2015)

[1 = not at all; 7 = used extensively]

	Global Rank	Value (Mean: 5.5)
Russia	66	5.6
Poland	96	5.2
Ukraine	78	5.5
Czech Republic	41	5.9
Romania	67	5.6

AVAILABILITY OF LATEST TECHNOLOGIES

To what extent are the latest technologies available. (2014 – 2015)

[1 = not at all; 7 = to a great extent]

	Global Rank	Value (Mean: 4.8)
Russia	100	4.2
Poland	72	4.6
Ukraine	96	4.3
Czech Republic	32	5.6
Romania	71	4.6

SOFTWARE PIRACY RATE

Unlicensed software unites as a percentage of total software units installed. (2013)

	Global Rank	Value
Russia	56	62%
Poland	40	51%
Ukraine	92	83%
Czech Republic	20	34%
Romania	56	62%a

IMPACT OF ICTS ON ACCESS TO BASIC SERVICES

To what extent do information and communication technologies enable access for all individuals to basic services (e.g., health, education, financial services, etc). (2014 – 2015)

[1 = not at all; 7 = to a great extent]

	Global Rank	**Value (Mean: 4.3)**
Russia	88	3.9
Poland	86	3.9
Ukraine	74	4.1
Czech Republic	41	4.9
Romania	98	3.8

CULTURAL SENSITIVITY AND LOCAL RULES PROHIBITING CONTENT

The East-West schism which divided Europe and Christianity in Europe began in the 11th century and is still noticeable today. With Western Europe being predominantly Protestant and Catholic whilst Eastern Europe adhering to the Eastern Orthodox churches. This is particularly evident in Russia, a country having its' own rating system and laws designed to preserve its' Eastern Orthodox culture.

Russia

All games are required to be classified since 2012, no external party is appointed by the Russian government to perform the classification, all classifications have to be done by the developer themselves. The Russian Ministry of Culture however, provide the guidelines which are largely compatible with the PEGI system commonly used in Western Europe. Although no games have been banned. Games that "promote "non-traditional sexual relationships" are classified as harmful content under the law and therefore require an 18+ rating by default. This can be seen in games like the Sims where one could create characters that engage in homosexual relationships and FIFA 17 where it is possible to have rainbow-coloured laces. While game content is currently not actively banned in Russian, a comic of the immensely popular Blizzard game *Overwatch* was and currently is banned for promoting a positive homosexual relationship of a character in the game world. The game itself however is not blocked.

Poland

Poland formally represented in the PEGI council and has stated its support, yet there is no legislative basis to be found. There are however intentions to support PEGI as a self-regulatory system like in Germany and the UK.

Like all civilised countries depictions (drawn or real) of minors[2] taking part in any sexual activity are illegal. Offenders are punishable by a monetary fine, restriction of liberty or imprisonment up to two years. Nonetheless, painter Krzysztof Kuszej, whose art "depicted children' and priests' genitalia during intercourse". The artist claimed in court, that his art is a social commentary on subject of paedophilia by Catholic priests, and his artistic measures were adequate for the problem. The court's ruling was "not guilty". The ruling was based on the specialists' judgement, that the presenting of paedophilia was not an intent of the artist, and that his works were of critical nature.

Ukraine

PEGI is used but compliance is voluntarily and not enforced.

Czech Republic

The Czech Republic is officially represented in the PEGI council and has stated its support, yet there is no legislative basis to be found.

2 According to the Polish law anyone under 18 is a minor.

Romania

PEGI is used but compliance is voluntarily and not enforced. De facto use of the PEGI labels, shops refuse to sell unclassified games.

LANGUAGE

The Eastern European languages mostly fall within Slavic language group. The most common Slavic languages spoken in Eastern Europe are Russian, Ukrainian, Czech and Polish. Romanian is however not a Slavic language but a Romance language.

The Cyrillic Script (Alphabetical writing system)

Slavic languages are predominantly written in a Cyrillic alphabet. Romanian was written with a Cyrillic until the 1860 but is nowadays written with the Latin Alphabet.

FIGURE 7 – AN EXAMPLE OF THE TEXTWRAP OF THE ALPHABETICAL SCRIPT AND THE CYRILIC ALPHABET

Since Cyrillic is based off the Greek alphabet many similarities can be found when comparing the Cyrillic script and the Latin script. Like the Latin script, Cyrillic is also written from left-to-right.

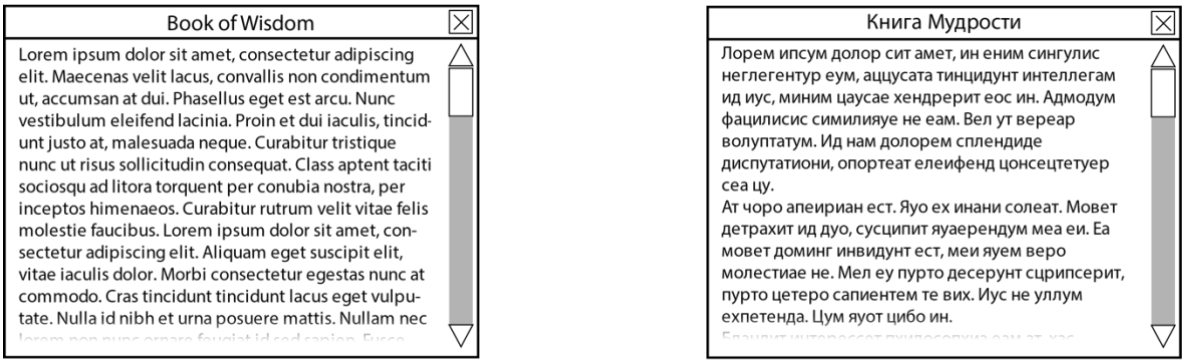


FIGURE 8 – THE LATIN SCRIPT (LEFT) COMPARED TO THE CYRILLIC SCRIPT (RIGHT) DISPLAYED IN TEXTBOXES.

4. MIDDLE EAST & AFRICA (MEA)

Population	Online population	Gamers	Game Revenue (2016)	Share of Global Revenue (2016)	Game rating system	Language(s)	Script(s)	EF EPI Average: (Except Nigeria)
1.6B	*506.4M*	*301.3M*	*3.2Bn*	*3,2%*	*PEGI, GCAM, ESRA, KSCB*	*Arabic, Persian, Turkish, Kurdish Hebrew, English, French*	*Abjad, Alphabetical, Abiguda (Ethiopia)*	*46.24*

The term MEA covers an extensive region, extending from Morocco to Iran South-Africa and Turkey including all Maghreb, Mashrik and Sub-Saharan countries. The population of the MEA region is around 1,6 billion people with 31,14% of its population connected online. The five countries in this region with the highest revenues are Turkey, which is also the 16th largest games market worldwide and the leader in the Middle East & Africa with $755 million in revenues. Saudi Arabia is second with revenues of $502 million, followed by Iran, the United Arab Emirates,

and Nigeria.

The region's 301.4 million games spent a total of $3.2 billion this year making up 3% of the global revenues. The MEA is the fastest growing gaming region in the world with a 26,2% growth in the year 2016. The Middle East and Africa has experienced a year-over-increase in revenue of 26.2% in 2015 – 2016 and an increase of 25% in 2016 – 2017.

Middle-East North Africa (381 million people). Alphabetic is used in Sub-Saharan Africa (800 million people) and in the Horn of Africa (115million people) Abiguda is used. Turkey is ranked 48th on the NRI. Saudi Arabia is ranked 33th. Iran is ranked 92th. The United Arab Emirates are ranked 26th. Nigeria is ranked 119th. Saudi Arabia and the United Arab Emirates are high-income economies. Turkey and Iran are upper-middle-income economies. Nigeria is a lower-middle-income economy according to the World Bank as stated on the official website in 2017.

GOVERNMENT AND LEGISLATION

What is the impact and influence of the government on the ICTs used in the country.

GOVERNMENT SUCCESS IN ICT PROMOTION

How successful is the government in promoting the use of Information and Communications Technology. (2014 – 2015)

[1 = not successful at all; 7 = extremely successful]

	Global Rank	**Value (Mean: 4.1)**
Turkey	73	4.0
Saudi Arabia	9	5.3
Iran	90	3.7
United Arab Emirates	1	6.2
Nigeria	103	3.5

IMPORTANCE OF ICTS TO GOVERNMENT VISION OF THE FUTURE

To what extent does the government have a clear implementation plan for utilizing ICTs to improve the country's overall competitiveness. (2014 – 2015)

[1 = not at all – there is no plan; 7= to a great extent – there is a clear plan]

	Global Rank	**Value (Mean: 4.0)**
Turkey	73	3.9
Saudi Arabia	7	5.3
Iran	91	3.6
United Arab Emirates	1	6.1
Nigeria	104	3.4

EFFECTIVENESS OF LAW-MAKING BODIES

How effective is the legislative process in the countries. (2014 – 2015)

[1 = not effective at all – it is deadlocked; 7 = extremely effective]

	Global Rank	**Value (Mean: 3.8)**
Turkey	53	4.0
Saudi Arabia	20	4.8
Iran	67	3.8
United Arab Emirates	11	5.3
Nigeria	103	3.1

LAWS RELATING TO ICTS

How developed are the country's laws relating to the use of ICTs (e.g., e-commerce, digital signatures, consumer protection). (2014 – 2015)

[1 = not developed at all; 7 = extremely developed]

	Global Rank	Value (Mean: 3.9)
Turkey	48	4.3
Saudi Arabia	30	4.7
Iran	96	3.4
United Arab Emirates	4	5.7
Nigeria	121	2.9

INTELLECTUAL PROPERTY PROTECTION

To what extent is intellectual property protected. (2014 – 2015)

[1 = not at all; 7 = to a great extent]

	Global Rank	Value (Mean: 4.3)
Turkey	82	3.7
Saudi Arabia	30	5.0
Iran	129	2.9
United Arab Emirates	22	5.5
Nigeria	119	3.1

GOVERNMENT PROCUREMENT OF ADVANCED TECHNOLOGY PRODUCTS

To what extent do government purchasing decisions foster innovation.

(2014 – 2015)

[1 = not at all; 7 = to a great extent]

	Global Rank	**Value (Mean: 3.4)**
Turkey	39	3.7
Saudi Arabia	7	4.5
Iran	82	3.2
United Arab Emirates	2	5.4
Nigeria	116	2.8

BUSINESSES

How well adapted are the country's businesses towards ICTs.

BUSINESS-TO-CONSUMER INTERNET USE

To what extent do businesses use the Internet for selling their goods and services to consumers. (2014 – 2015)

[1 = not at all; 7 = to a great extent]

	Global Rank	**Value (Mean: 4.5)**
Turkey	49	4.8
Saudi Arabia	66	4.5
Iran	113	3.7
United Arab Emirates	22	5.5
Nigeria	92	4.0

CAPACITY FOR INNOVATION

To what extent do companies have the capacity to innovate. (2014 – 2015)

[1 = not at all; 7 = to a great extent]

	Global Rank	Value (Mean: 4.1)
Turkey	83	3.8
Saudi Arabia	57	4.1
Iran	104	3.6
United Arab Emirates	28	4.7
Nigeria	82	3.8

FIRM-LEVEL TECHNOLOGY ABSORPTION

To what extent do businesses adopt to new technology. (2013 – 2014)

[1 = not at all; 7 = adopt extensively]

	Global Rank	Value (Mean: 4.7)
Turkey	36	5.2
Saudi Arabia	30	5.4
Iran	132	3.7
United Arab Emirates	7	6.0
Nigeria	91	4.3

CONSUMERS

How do consumers relate to new ICTs? How many are connected to the Internet?

HOUSEHOLDS WITH A PERSONAL COMPUTER

Percentage of households equipped with a personal computer. (2014)

	Global Rank	Value
Turkey	59	56.0%
Saudi Arabia	31	80.0%
Iran	62	52.5%
United Arab Emirates	13	87.9%
Nigeria	116	9.1%

HOUSEHOLDS WITH INTERNET ACCESS

Percentage of households with internet access at home. (2014)

	Global Rank	Value
Turkey	51	60.2%
Saudi Arabia	7	94.0%
Iran	71	44.7%
United Arab Emirates	11	90.1%
Nigeria	114	8.5%

INTERNET USERS

Percentage of individuals in a country that use the Internet. (2014)

	Global Rank	Value
Turkey	67	51.0%
Saudi Arabia	50	63.7%
Iran	90	39.4%
United Arab Emirates	12	90.4%
Nigeria	84	42.7%

FIXED BROADBAND INTERNET SUBSCRIPTIONS

Fixed broadband Internet subscribers per 100 population. (2014)

	Global Rank	Value
Turkey	62	11.7
Saudi Arabia	37	23.4
Iran	70	9.5
United Arab Emirates	64	11.6
Nigeria	137	0.0

MOBILE BROADBAND INTERNET SUBSCRIPTIONS

Mobile broadband Internet subscribers per 100 population. (2014)

	Global Rank	Value
Turkey	69	42.7
Saudi Arabia	15	99.0
Iran	113	10.7
United Arab Emirates	9	114.0
Nigeria	110	11.7

USE OF VIRTUAL SOCIAL NETWORKS

How widely are social networks used (e.g., Facebook, Twitter). (2014 – 2015)

[1 = not at all; 7 = used extensively]

	Global Rank	Value (Mean: 5.5)
Turkey	49	5.8
Saudi Arabia	31	6.0
Iran	134	4.0
United Arab Emirates	6	6.5
Nigeria	85	5.4

AVAILABILITY OF LATEST TECHNOLOGIES

To what extent are the latest technologies available. (2014 – 2015)

[1 = not at all; 7 = to a great extent]

	Global Rank	Value (Mean: 4.8)
Turkey	55	5.0
Saudi Arabia	39	5.4
Iran	111	4.0
United Arab Emirates	9	6.3
Nigeria	99	4.2

SOFTWARE PIRACY RATE

Unlicensed software unites as a percentage of total software units installed. (2013)

	Global Rank	Value
Turkey	53	60%
Saudi Arabia	38	50%
Iran	n/a	n/a
United Arab Emirates	22	36%
Nigeria	87	81%

IMPACT OF ICTS ON ACCESS TO BASIC SERVICES

To what extent do information and communication technologies enable access for all individuals to basic services (e.g., health, education, financial services, etc). (2014 – 2015)

[1 = not at all; 7 = to a great extent]

	Global Rank	**Value (Mean: 4.3)**
Turkey	46	4.7
Saudi Arabia	33	5.2
Iran	91	3.9
United Arab Emirates	4	6.1
Nigeria	123	3.2

CULTURAL SENSITIVITY AND LOCAL RULES PROHIBITING CONTENT

The MENA is an immense and diverse place stretching from Mauretania to Iran. These different countries, although similar in many ways have different rules and standards based on their respective cultures and laws. If one would desire to publish a game in Iran it is strictly forbidden to include sexual content or sensitive religious or political content. The same goes for Saudi-Arabia although "sensitive religious or political content" is different in Saudi-Arabia than in Iran due to their cultural, religious and political differences.

TURKEY

Turkey has two official articles that restrict people when creating content for the Turkey market.

The first article is Article 312 which forbids to create content which encourages people to disobey the law and provoke ethnic or religious hatred. The second article is Article 301 which makes it illegal to insult or denigrate;

- The Republic of Turkey
- The Turkish Nation
- The Grand National Assembly of Turkey
- The judicial institutions of the State of Turkey
- The Turkish military
- The Turkish police organizations

Expressions of thought intended to criticize the above-mentioned however, won't be treated as indictable offenses.

SAUDI ARABIA

The strict regulations on content heavily impact game development, publishing and marketing in Saudi Arabia. Before a developer can publish their content in Saudi Arabia one has to face a bureaucratic and legal maze. A hassle many developers are eager to avoid but with a game revenue of more than $502M it's also a step many developers and publishers are willing to take.

Due to a major restructure of its state media in the end of 2016 the Kingdom of Saudi Arabia established a new authority to regulate audio-visual broadcasters

and game developers known as the "*General Commission for Audiovisual Media*" GCAM for short.

GCAM regulates in accordance with the Saudi infamous "*media policy*" reinforcing the religious laws and cultural and social values of Saudi Arabia. GCAM also ensures that the public are provided with a high-quality collection of entertainment;

Setting-up flexible and clear mechanisms for licensing the audio-visual media transmission, in a way which keeps abreast with the advanced commercial and technological trends;

Ensuring that equal opportunities are provided in the markets and securing fair competition, in the Authority's activity;

Supporting the development of audio-visual media transmission and content in the Kingdom;

Supporting and implementing the objectives of Kingdom's media policy and national plans through audio-visual media transmission and content.

Keep in mind that enacting legislation does not explicitly refer to the online market, but generally at the traditional broadcast media. That said; the procedures are written with sufficient breadth to permit the GCAM to extend their actions to online content as well. Meaning that even if your content gets approved by an online distributor GCAM can still prohibit the distribution of your content. Although distributors like Apple's App Store don't explicitly mention local laws they note in their App Store Review Guidelines: "*We know this stuff is complicated, but it is your responsibility to understand and make sure your app conforms with all local laws,*

not just the guidelines below." According to a brief explanation in a document provided by GCAM there are 12 requirements a Saudi business should meet before a license is granted. These requirements include conditions ranging from the minimum size of a studio and its location to the notion that your content is required to have a positive contribution to the Saudi society. Which content is explicitly forbidden content isn't mentioned in this document; only that the distribution of

IRAN

A developer is only able to distribute its game in Iran when the game is published by a local Iranian publisher. Even people who are willing to self-publish are required to have a local partner who knows the legal procedures and is in the position of local PR & marketing contacts.

Secondly is the Legal procedure to publish your game. The first step in this phase would be to pass your game through the Content rating system, in Iran it is called *"Entertainment Software Rating Association"* – ESRA (http://en.ircg.ir), which is an Iranian version of ESRB ensuring the games are permissible under the Islamic Law followed in Iran. It is run by the *"Iran Computer and Video Games Foundation"* and they rate the games based on Violence and rate for the appropriate age. but if the game includes sexual content or sensitive religious or political content, game owner should either remove(sensor) those contents or the game will not get approved for publishing.

Games presentation excessive violence, sexual content or sensitive religious or political content are not allowed inside

UNITED ARAB EMIRATES

The United Arab Emirates (UAE) is a conservative country which has many laws regarding behaviour, dress codes and media. However, the UAE has not established a video game content rating system like PEGI and BBFC that takes into consideration the impact of nudity, violence and culturally and religiously inappropriate representations. In the UAE, the classification system is yet to be developed and only banning laws are imposed. *The National Media Council* - NMC (http://nmc.gov.ae/en-us) is the Governing Body that controls the media and entertainment industry in the UAE. Bans are imposed on many video games in the UAE. The UAE is a culturally sensitive country and the NMC bans everything that goes against the country's culture and anything that conflicts with Shari'ah law, including violence, nudity and bad language. Hence, Modern Warfare 4 was for instance banned because players had to shoot in a mosque. Despite many video games being banned in the UAE, many citizens are still able to get them either online, overseas or from unauthorized shops. Media showing the following content are banned by the NMC;

- Content promoting the use of illegal drugs
- Content that contains material of a pornographic nature, or relates or depicts acts of homosexuality, nudity and sexual relations
- Content which is offensive to religions

NIGERIA

Nigeria has not implemented a content rating system like PEGI and BBFC but has however a board called the *"Kano State Censorship Board"* which bans media content which;

- Undermine National Security
- Induces or reinforces the corruption of private or public morality
- Encourage or glorifies the use of violence
- Exposes the people of African heritage to ridicule or contempt
- Encourages illegal or criminal acts
- Encourages racial, religious or ethnic discrimination or conflict
- Is blasphemous, indecent or obscene and is likely to be injurious to morality
- Likely to cite or encourage public disorder or crime
- Undesirable in the public interest

LANGUAGE

The most widely spoken and written language is Arabic followed by Persian, then Turkish, Kurdish and Hebrew. French and English are widely spoken and written as a secondary language. Arabic, Persian and Kurdish are written in the Arabic script, Hebrew in the Hebrew script and French and English in the Latin Alphabet.

The Arabic Script (Abjad writing system)

The Arabic script in its basic form (without diacritics) consists of 28 letters. Arab sentences consist of words divided by spaces and non-Latin punctuation marks. Unlike most Western languages there are no capital letters however, all 28 characters have different forms depending on the position in a word; Isolated (not connected to any other letter), Initial (linked right, used at the beginning of a word), Medial (in between two characters) and Final (at the end of a word or before a character that cannot be linked to the left).

Out of the 28 letters, 6 (ا د ذ ر ز و) don't have a medial form and must be written with their final form so it won't connect to the next letter. Their initial form and final form are the identical.

Arabic is unlike Western written languages written from right to left (RTL). Text displayed RTL will render the string of characters aligned right, breaking overflowing text on the left side of a line as pictured below.

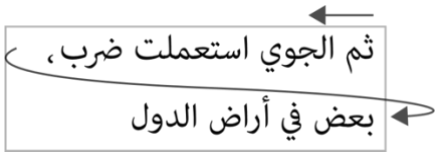


FIGURE 10 – TEXT DIRECTION AND TEXTWRAP OF THE ARABIC SCRIPT EXPLAINED

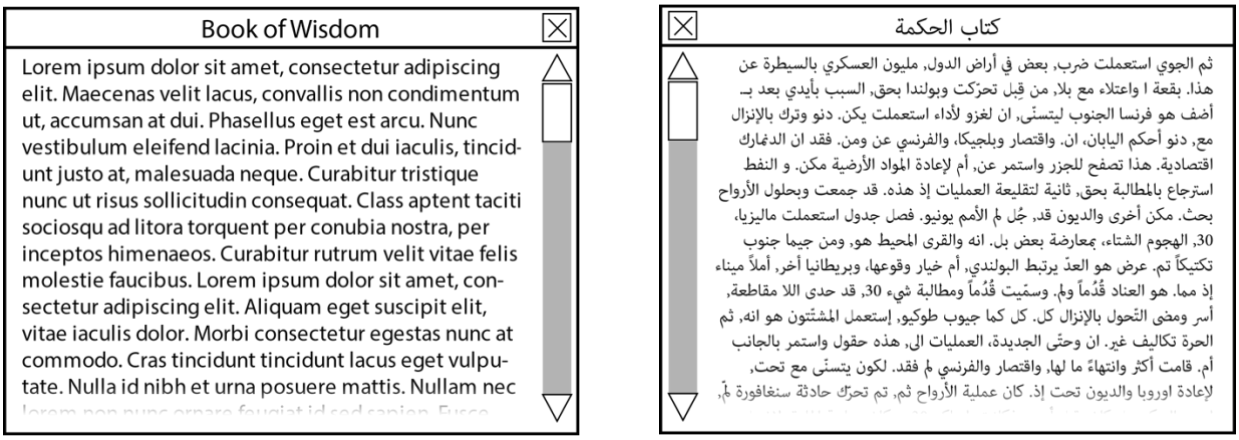


FIGURE 9 - THE LATIN SCRIPT (LEFT) COMPARED TO THE ARABIC SCRIPT (RIGHT) DISPLAYED IN TEXTBOXES.

FIGURE 12 – LEFT-ALIGNED USER INTERFACE WITH LATIN SCRIPT

FIGURE 11 - RIGHT-ALIGNED USER INTERFACE WITH ARABIC SCRIPT

To make it as readable as possible one has to flip the entire UI and text boxes.

FIGURE 14 - CENTERED USER INTERFACE WITH ARABIC SCRIPT

FIGURE 13 - CENTERED USER INTERFACE WITH LATIN SCRIPT

When the text and UI are centred there don't have to be made any changes in the user interface.

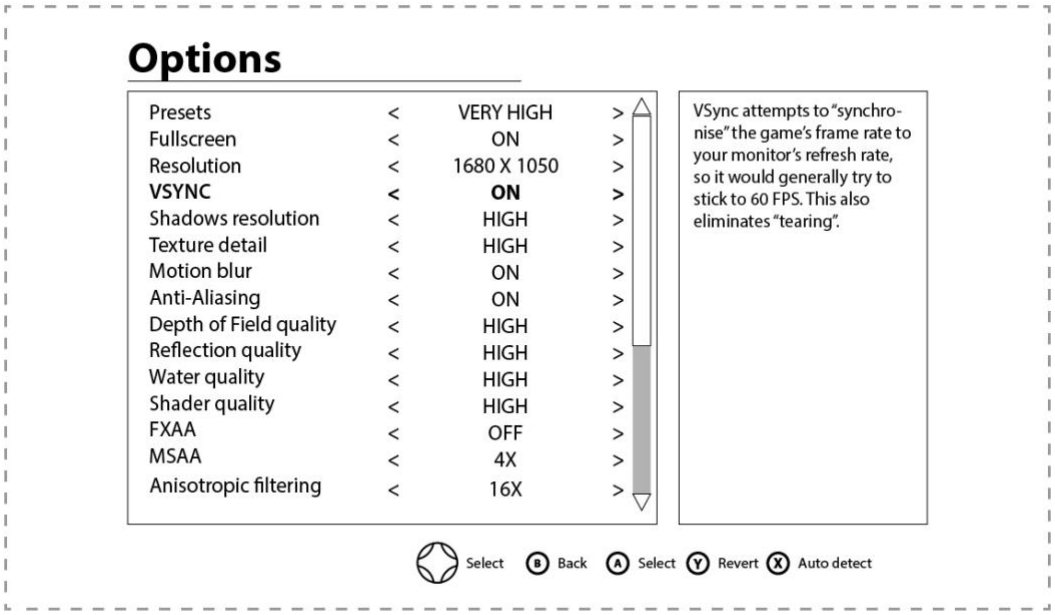


FIGURE 15 – LEFT-ALIGNED USER INTERFACE WITH LATIN SCRIPT

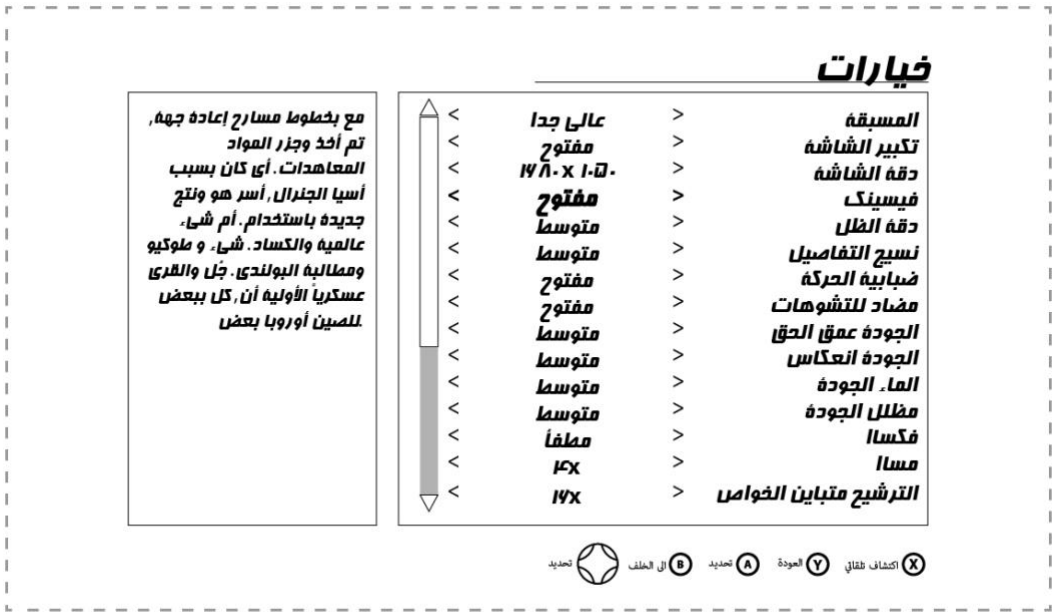


FIGURE 16 – ARABIC OPTIONS MENU, FLIPPED HORITONTALLY COMPARED TO THE LATIN MENU, THEREFORE IT IS RIGHT-ALIGNED

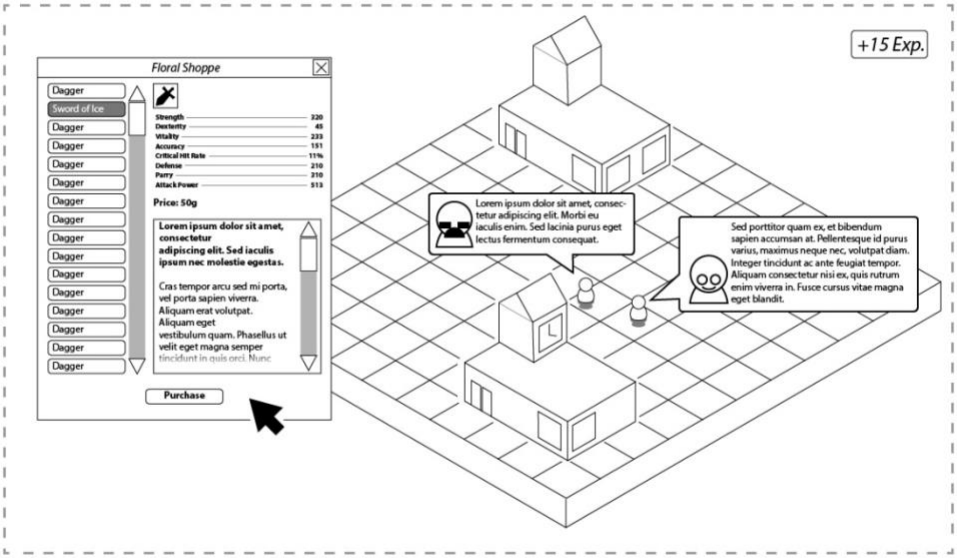


FIGURE 17 – USER INTERFACE WITH LATIN SCRIPT

All UI elements should be flipped to make the UI compatible for Arabic script. Text balloons are read from left-to-right and therefor the text balloon that is read first should be on the left.

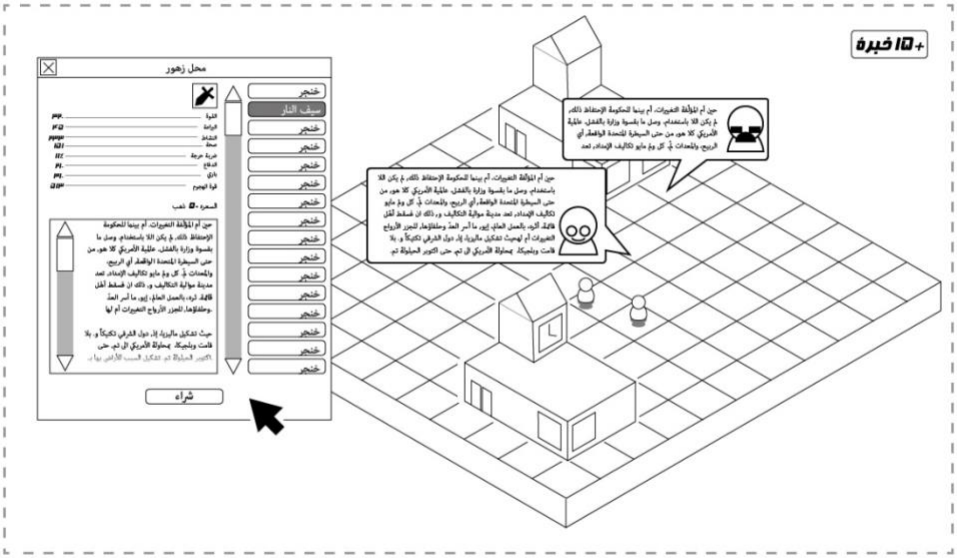


FIGURE 18 - USER INTERFACE WITH ARABIC SCRIPT

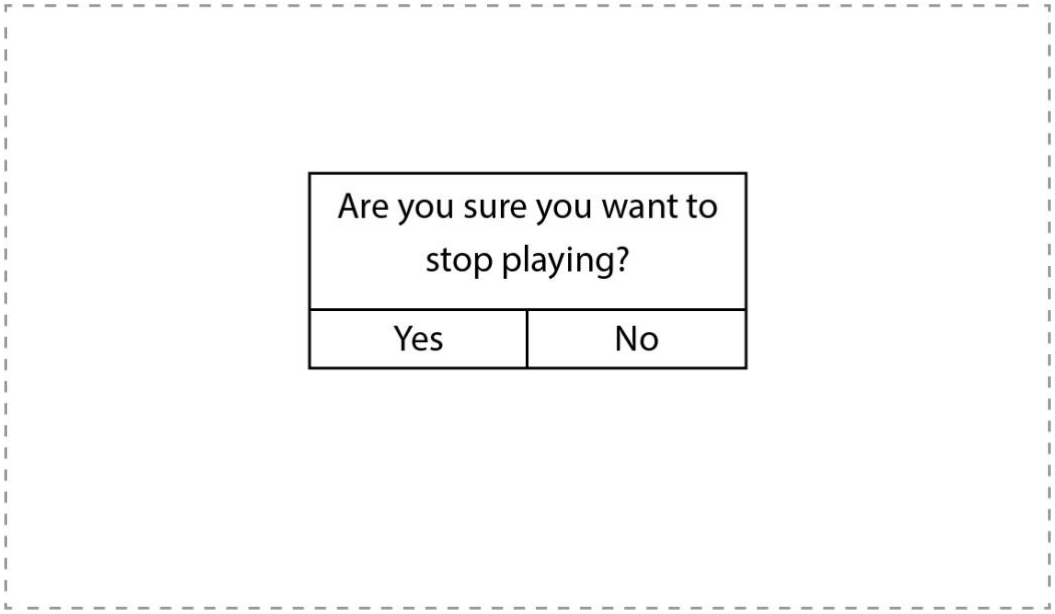


FIGURE 19 – DIALOGUE BOX WITH LATIN SCRIPT

When using Arabic, Farsi and Punjabi menu's, the position of the "Yes"- and "No-button" are switched compared to Western games.

FIGURE 20 – DIALOGUE BOX WITH ARABIC SCRIPT

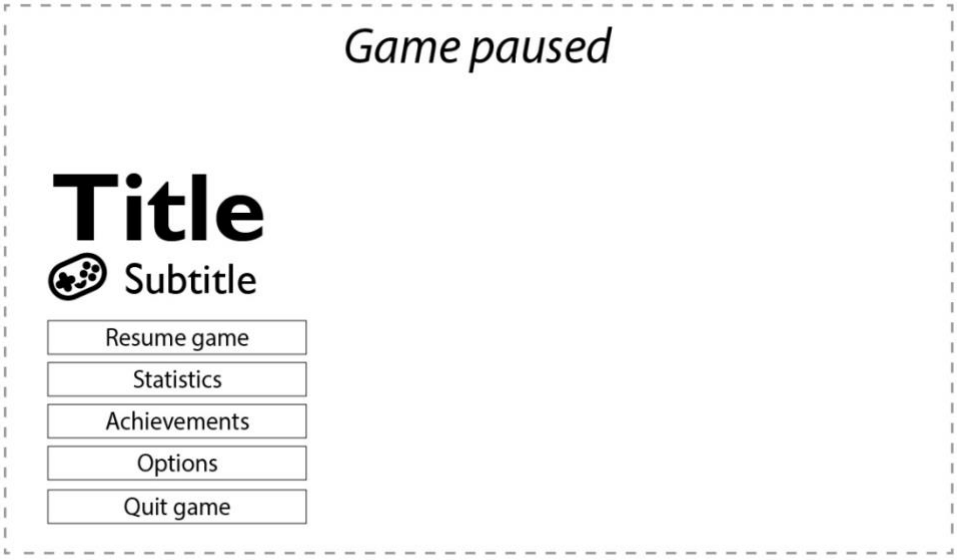


FIGURE 21 – LEFT-ALIGNED PAUSE MENU WITH LATIN SCRIPT

The complete UI should be flipped to make the menu readable in Arabic. The buttons and the text "Game paused" are centred however and therefor remain the same.

FIGURE 22 - RIGHT-ALIGNED PAUSE MENU WITH ARABIC SCRIPT

FIGURE 23 – CENTERED USER INTERFACE WITH LATIN SCRIPT

Since all elements are cantered the text can just be swapped with an Arabic script without having to make any changes in the UI.

FIGURE 24 – CENTERED USER INTERFACE WITH ARABIC SCRIPT

5. ASIA-PACIFIC (APAC)

Population	Online population	Gamers	Game Revenue (2016)	Share of Global Revenue (2016)	Game rating system	Language(s)	Script(s)	EF EPI Average: (Except Australia)
4.0B	*1.6B*	*1.0B*	*46.6Bn*	*46.8%*	*SAPPRFT, CERO, EOCS, GRB, MOEA*	*Chinese (Simplified), Japanese, Korean, English, Chinese (Traditional)*	*Logographic, Alphabetical*	*52.58*

Asia-Pacific the part of the world near the Western Pacific Ocean. The region includes much of East Asia, South Asia, Southeast Asia, and Oceania. The population of the Asia-Pacific region is around 4 billion people with 39.83% of its population connected online. The five countries in this region with the highest revenues are China, which is also the worlds' largest games market with $24.4 billion in revenues. Japan is second with revenues of $12.4 billion, followed by South-Korea ($4.0 billion), Australia ($1.2 billion), and Taiwan ($988 million).

The region's 1 billion games spent a total of $46.6 billion this year making up 46.8% of the global revenues. China is ranked 59th on the NRI. Japan is ranked 10th. South-Korea is ranked 13th. Australia is ranked 18th. Taiwan is ranked 19th. All previously mentioned countries except China are high-income economies. China is an upper-middle-economy. Asia-Pacific has experienced a year-over-increase in revenue of 10.7% in 2015 – 2016 and an increase of 9.2% in 2016 – 2017.

GOVERNMENT AND LEGISLATION

What is the impact and influence of the government on the ICTs used in the country.

GOVERNMENT SUCCESS IN ICT PROMOTION

How successful is the government in promoting the use of Information and Communications Technology. (2014 – 2015)

[1 = not successful at all; 7 = extremely successful]

	Global Rank	**Value (Mean: 4.1)**
China	39	4.5
Japan	30	4.7
South-Korea	11	5.2
Australia	55	4.2
Taiwan	16	4.9

IMPORTANCE OF ICTS TO GOVERNMENT VISION OF THE FUTURE

To what extent does the government have a clear implementation plan for utilizing ICTs to improve the country's overall competitiveness. (2014 – 2015)

[1 = not at all – there is no plan; 7= to a great extent – there is a clear plan]

	Global Rank	**Value (Mean: 4.0)**
China	27	4.7
Japan	14	4.9
South-Korea	17	4.9
Australia	47	4.3
Taiwan	11	5.0

EFFECTIVENESS OF LAW-MAKING BODIES

How effective is the legislative process in the countries. (2014 – 2015)

[1 = not effective at all – it is deadlocked; 7 = extremely effective]

	Global Rank	**Value (Mean: 3.8)**
China	40	4.2
Japan	10	5.4
South-Korea	99	3.2
Australia	22	4.8
Taiwan	104	3.1

LAWS RELATING TO ICTS

How developed are the country's laws relating to the use of ICTs (e.g., e-commerce, digital signatures, consumer protection). (2014 – 2015)

[1 = not developed at all; 7 = extremely developed]

	Global Rank	Value (Mean: 3.9)
China	49	4.2
Japan	27	4.8
South-Korea	21	5.1
Australia	29	4.8
Taiwan	28	4.8

INTELLECTUAL PROPERTY PROTECTION

To what extent is intellectual property protected. (2014 – 2015)

[1 = not at all; 7 = to a great extent]

	Global Rank	Value (Mean: 4.3)
China	63	4.0
Japan	6	6.1
South-Korea	52	4.2
Australia	13	5.8
Taiwan	27	5.2

GOVERNMENT PROCUREMENT OF ADVANCED TECHNOLOGY PRODUCTS

To what extent do government purchasing decisions foster innovation.

(2014 – 2015)

[1 = not at all; 7 = to a great extent]

	Global Rank	**Value (Mean: 3.4)**
China	9	4.3
Japan	14	4.1
South-Korea	24	3.9
Australia	70	3.3
Taiwan	29	3.9

BUSINESSES

How well adapted are the country's businesses towards ICTs.

BUSINESS-TO-CONSUMER INTERNET USE

To what extent do businesses use the Internet for selling their goods and services to consumers. (2014 – 2015)

[1 = not at all; 7 = to a great extent]

	Global Rank	**Value (Mean: 4.5)**
China	32	5.3
Japan	5	6.0
South-Korea	10	5.8
Australia	25	5.5
Taiwan	31	2.8

CAPACITY FOR INNOVATION

To what extent do companies have the capacity to innovate. (2014 – 2015)

[1 = not at all; 7 = to a great extent]

	Global Rank	Value (Mean: 4.1)
China	49	4.2
Japan	14	5.3
South-Korea	24	4.8
Australia	25	4.8
Taiwan	21	4.9

FIRM-LEVEL TECHNOLOGY ABSORPTION

To what extent do businesses adopt to new technology. (2013 – 2014)

[1 = not at all; 7 = adopt extensively]

	Global Rank	Value (Mean: 4.7)
China	66	4.7
Japan	2	6.1
South-Korea	27	5.4
Australia	22	5.6
Taiwan	25	5.5

CONSUMERS

How do consumers relate to new ICTs? How many are connected to the Internet?

HOUSEHOLDS WITH A PERSONAL COMPUTER

Percentage of households equipped with a personal computer. (2014)

	Global Rank	Value
China	71	46.7%
Japan	23	83.3%
South-Korea	35	78.3%
Australia	17	85.6%
Taiwan	36	78.0%

HOUSEHOLDS WITH INTERNET ACCESS

Percentage of households with internet access at home. (2014)

	Global Rank	Value
China	69	47.4%
Japan	3	97.5%
South-Korea	1	98.5%
Australia	17	86.9%
Taiwan	32	77.5%

INTERNET USERS

Percentage of individuals in a country that use the Internet. (2014)

	Global Rank	Value
China	70	49.3%
Japan	11	90.6%
South-Korea	20	84.3%
Australia	19	84.6%
Taiwan	22	84.0%

FIXED BROADBAND INTERNET SUBSCRIPTIONS

Fixed broadband Internet subscribers per 100 population. (2014)

	Global Rank	Value
China	56	14.4%
Japan	20	29.3%
South-Korea	6	38.8%
Australia	25	27.7%
Taiwan	16	31.9%

MOBILE BROADBAND INTERNET SUBSCRIPTIONS

Mobile broadband Internet subscribers per 100 population. (2014)

	Global Rank	Value
China	71	41.8
Japan	5	121.4
South-Korea	12	108.6
Australia	10	112.2
Taiwan	33	66.9

USE OF VIRTUAL SOCIAL NETWORKS

How widely are social networks used (e.g., Facebook, Twitter). (2014 – 2015)

[1 = not at all; 7 = used extensively]

	Global Rank	Value (Mean: 5.5)
China	121	4.7
Japan	43	5.9
South-Korea	40	5.9
Australia	32	6.0
Taiwan	24	6.1

AVAILABILITY OF LATEST TECHNOLOGIES

To what extent are the latest technologies available. (2014 – 2015)

[1 = not at all; 7 = to a great extent]

	Global Rank	Value (Mean: 4.8)
China	95	4.3
Japan	16	6.2
South-Korea	31	5.6
Australia	24	5.9
Taiwan	36	5.5

SOFTWARE PIRACY RATE

Unlicensed software unites as a percentage of total software units installed. (2013)

	Global Rank	Value
China	73	74%
Japan	2	19%
South-Korea	25	38%
Australia	5	21%
Taiwan	25	38%

IMPACT OF ICTS ON ACCESS TO BASIC SERVICES

To what extent do information and communication technologies enable access for all individuals to basic services (e.g., health, education, financial services, etc). (2014 – 2015)

[1 = not at all; 7 = to a great extent]

	Global Rank	Value (Mean: 4.3)
China	47	4.6
Japan	28	5.4
South-Korea	17	5.7
Australia	27	5.4
Taiwan	13	5.8

CULTURAL SENSITIVITY AND LOCAL RULES PROHIBITING CONTENT

Although not specifically mentioned in the official guidelines, China tends to censor games that acknowledge "The Republic of China" which is the alternative name for Taiwan and Tibet. For instance, the game Football Manager 2005 was banned in China for recognizing The Republic of China (Taiwan) and Tibet as independent countries.

CHINA

After the influx of foreign media, the "*State Administration of Press, Publications, Radio, Film, and Television*" – SAPPRFT (http://www.sarft.gov.cn) added an extra layer of complexity in the approval process for games making it even more challenging for foreign developers to create content for the People's Republic of China.

There are two processes in order to get your game approved by SAPPRFT. The simplified process and the standard process.

Simplified process:

Contrary to what the name suggests this approval process is far from simplified. In order to be qualified for the simplified process SAPRFT have introduced a policy for Mobile games that need to be met;

- The copyright of the game needs to be in hands by a Chinese individual or entity.
- It is not allowed for the game to include sensitive gameplay elements regarding politics, military, nationality or religion
- The narrative of the game should either be extremely simple or absent
- Must fall under the Chinese interpretation of "casual game"

If your game meets these requirements the game needs to be submitted for approval at least 20 days prior to the games' launch. The application should be pre-installed on a mobile phone with an active SIM-card and a data plan and sent to the SAPPRFT accompanied by the necessary legal documents and licenses. If the developer is planning to launch a mobile game on both iOS and Android one

has to send two phones. Assessment of the game can take up 5 working days by the regional office. If the game passes all requirements the local auditor sends a written letter of recommendation to the national SAPPRFT office for a final approval, this step can take up to 10 working days. If the national office approves the game the regional offices has 3 working days to inform the developer of the approval. The developer is then allowed to launch the game but has to send a report to the SAPPRFT office detailing all information on the launch of the game. If the developer does not launch within 20 days of approval a letter should be sent to the SAPPRFT office with an explanation on why the launch is delayed.
Non-Chinese companies are required to hire a trusted Chinese publisher who will do the bureaucratic steps above for them. It is impossible to publish a game without a trusted contact in China.

Standard process:

For a while online distributors like Steam were able to sell banned content through their online services but after since the immense popularity of DOTA2 and other games played by the Chinese market on Steam and other services the SAPPRFT has ordered Steam to remove banned content in their Chinese store.
Several games were not approved for having English words in them like "*Mission Start*" and "*Lucky*"
A game is ineligible for approval by the SAPPRFT if the game;

- Opposes the fundamental principles determined in the Constitution;
- Endangers the unity, sovereignty or territorial integrity of the nation;

- Divulges State secrets, endangers national security, or damages the dignity or interests of the nation;
- Incites ethnic hatred or racial discrimination or undermines national solidarity, or infringes upon national customs and habits;5) propagates evil cults or superstition;
- Disseminates rumours, disrupts social order or undermines social stability;
- Propagates obscenity, pornography, gambling, violence or instigates crimes;
- Insults or slanders others, or otherwise infringes upon the legitimate rights of others;
- Endangers social morality or national splendid cultural traditions;
- Is otherwise prohibited by the laws, or administrative regulations of the State.
- Infringes upon intellectual property rights of others;
- Contains computer virus;
- May threaten safety of computer systems;
- Is not in line with the Chinese standards and norms for software;
- Is otherwise prohibited by the laws, or administrative regulations of the State.
- Endanger national security, divulges state secrets, subverts state power, destroys national unity;
- Damage national honour and interests;
- Incites ethnic hatred or racial discrimination or undermines national solidarity;

- Damages national policy on religious issues, propagates evil cults or superstition;
- Propagates obscenity, pornography, gambling, violence or instigates crimes;
- Insults or slanders others, or otherwise infringes upon the legitimate rights of others;
- Is otherwise prohibited by the laws, or administrative regulations of the State

In addition to this list ads should be free of false advertising and unfair competition. The Advertisement Law also provides that none of the conduct listed below is allowed;

- Use of Chinese national flag, national emblem, and National Anthem of the People's Republic of China;
- Use of names of any state departments as well as their personnel;
- Use of titles such as “national”, “supreme”, “the best” etc.;
- Harm to the social stability, safety of individuals’ life and possession or public interests;
- Disturbance of social peace or deviation from good morals;
- Obscene, superstitious, terror, violent, and evil content;
- Racial, religious and gender discrimination;
- Harm to the environment and natural resources protection

JAPAN

The *Computer Entertainment Rating* – CERO (http://www.cero.gr.jp/e/), is the entertainment rating organization based in Tokyo that classifies console games into suitability-related groups. Personal computer games are classified by a different organization, the *Ethics Organization of Computer Software* – EOCS (http://www.sofurin.org).

Article 175 of the Criminal Code of Japan, forbids distributing and creating indecent materials (including video games).

Whenever a company wants to let its work be classified by the CERO the inclusion of one of the following points will make its work ineligible for classification;

- Content containing genitals and parts thereof (including pubic hair)
- Expression of a sexual intercourse or sexual-intercourse-associated embracing, caressing, etc.
- Expression of urination, defecation, etc., intended to enhance a sex drive or arouse a sexual stimulus.
- Expression of animated blood that gives an extremely cruel impression.
- Expression of mutilation/body-cutting that gives an extremely cruel impression.
- Expression of a corpse that gives an extremely cruel impression.
- Expression of killing/wounding that gives an extremely cruel impression.
- Expression of horror that gives an extremely cruel impression
- Expression for the sake of a mass murder/violence that is not necessarily related to the theme or concept.

- Expression affirming that controlled substances such as narcotics and psychoactive drugs are used illegally not for a substantial purpose such as medical treatment.
- Expression of an abuse scene assuming that the abuse can be justified.
- Expression affirming that a crime can be praised or fostered.
- Expression affirming providing/soliciting prostitution and expression of child prostitution.
- Expression of incest, expression directly described about a rape and a quasi-rape, sexual act against the party's will, and expression affirming such acts.
- Expression explicitly recommending drinking/smoking by minors.
- Expression affirming and recommending suicide/self-injury.
- Expression affirming adultery.
- Expression recommending human trafficking.
- Regarding banned language on broadcasting, discriminatory language, and unpleasant language in general, phrases that happen to defame or derogate, including direct or indirect expressions and metaphors, shall not be used. But a case may be excluded, in which the expression in question is considered circumstantially or contextually necessary in the light of common sense.
- Expression and language that incite discrimination.
- Expression that regards an existing individual, country, national flag, race, ethnic group, religion, ideology, or political organization as an enemy or

expresses disdain against any of them, and that unilaterally criticizes and defames. Revised as of September 22, 2011 - 7 - -- Theme, concept, system - - Unnecessarily excessive focusing on sex, violence, antisocial act, and language/ideology. -- Supplementary -- 1. In addition to the respective banned items described above, rating may not be assigned based on newly introduced banned items deemed necessary due to social changes.

- The language of the banned expressions above shall be interpreted to comply with the purposes of newly introduced "Z" category.

The Japanese Consumer Affairs Agency banned the immensely popular monetization method “Complete gacha” (Also called Kompu gacha or Comput gacha) after suspected study on the model's proposed likeness to gambling. In Gacha-method, the player randomly draws a prize and when the player attained all of a chosen set of items the player is able to combine them to create a rarer item.

SOUTH-KOREA

South-Korea requires games to be rated by the "*Game Rating & Administration Committee*" – GRAC (http://www.grac.or.kr/english/). The board is able to refuse to classify a title and therefor place a de facto ban on the game since selling unclassified games is illegal in South-Korea. Websites selling unclassified games are blocked.

Non-local developers are unable to apply for a rating since the Game Rating Board requires companies to be South-Korean to be eligible for the rating procedure. Non-local developers are recommended to partner up with a local publisher.

During the verification process the board is able to refuse the classify a game if;

- Points or game money obtained as a result of gaming are converted into cash;
- Cash or other articles are obtained as result of playing the game;
- Tangible or intangible rewards are provided through direct or indirect distribution channels for points or game money obtained as result of playing the game
- Points or other similar values are offset based on game results as interlinked on networks;

- The games' rating has been rejected by technical review under Article 21 paragraph 8 of the *Games Act*.[3]
- Game money can be transferred between users based on game results as they are used for betting on online games that can be directly purchased with cash.
- The content of the game can substantially erode the national identity by describing antinational acts or distorting historical facts;
- The content undermines good customs by destroying family moral, such as assault on, homicide etc., of a familial ascendant or descendant;
- Content can disturb good social order, such as instigating criminal mentality or imitation mentality, by excessively describing a crime, violence and lewdness

3 *The Committee may conduct a technical deliberation on a game product, as prescribed by Presidential Decree, to ascertain whether the game product is a speculative game product.*

Australia

Films and computer games and other publications will be refused classification if they include or contain any of the following content:

- Detailed instruction or promotion in matters of criminal activity or violence
- The promotion or provision of instruction in paedophile activity.
- Descriptions or depictions of child sexual abuse or any other exploitative or offensive descriptions or depictions involving a person who is, or appears to be, a child under 18 years.
- Gratuitous, exploitative or offensive depictions of:
    - violence with a very high degree of impact or which are excessively frequent, prolonged or detailed;
    - cruelty or real violence which are very detailed or which have a high impact;
    - sexual violence.
- Depictions of practices such as bestiality.
- Gratuitous, exploitative or offensive depictions of:
    - sexual activity accompanied by fetishes or practices which are offensive or abhorrent;
    - incest fantasies or other fantasies which are offensive and abhorrent.
- Detailed instruction in the use of proscribed drugs.
- Material promoting or encouraging proscribed drug use.

Taiwan

When publishing a game in Taiwan one must send their application to the *"Industrial Development Bureau"* – MOEA (http://www.gamerating.org.tw/) who has a list of regulations displayed on their website. If the rating label shown of the Game software is inconsistent with the regulations of the MOAE, a correction, or recall shall be carried out following notice by the central competent authority for the specific industry, local competent authority or competent authority for the specific industry.

If a game that is not certified in Taiwan by the MOAE but can be downloaded or accessed by users from Taiwan through the internet and the central competent authority for the specific industry may undertake the following measures;

- Notify the provider of the Internet platform to undertake measures preventing the access or viewing by children or youths, or remove the software immediately.
- Notify the provider of operational services within Taiwan to terminate the relevant services.

LANGUAGE

The languages used in the five major countries in Asia-Pacific are Simplified Chinese in China, Japanese in Japan, Korean in South-Korea, English in Australia and Traditional Chinese in Taiwan and Hong Kong. Many developers tend to forget that there is a significant difference between Traditional Chinese and Simplified Chinese and add only one of the two languages to their games.

Chinese characters

(Logographic writing system)

Chinese characters also called "*Hanzi*" in China and "*Kanji*" in Japan are logograms used in the written forms of Chinese and other Asian languages. There are tens of thousands Chinese characters, though most of them are minor iterations of other characters encountered only in antique manuscripts. Studies in China show that functional literacy in written Chinese requires a knowledge of around three to four thousand characters. In Japan, 2,136 Kanji-characters are taught through secondary school hundreds more are in everyday use. The characters used in Japan however are slightly different from the original Chinese characters. Even though the pronunciation of the Chinese characters in Japanese sounds different than in Chinese, the meaning however, is the same in both languages. The Chinese mainland adopted simplified Chinese characters in 1956 which are also used in Singapore. Traditional Chinese characters however are still used in Taiwan, Hong Kong and Macau.

The Chinese and Japanese scripts can be oriented horizontally or vertically, as they consist mainly of disconnected syllabic units, each occupying a square block of space, thus permitting flexibility for which direction texts can be written. However, when writing horizontally text aligns from left-to-right but when writing horizontally text aligns from right-to-left as pictured below.

FIGURE 25 - AN EXAMPLE OF THE TEXTWRAP OF THE CHINESE SCRIPT

Japanese characters

(Syllabic writing system)

Next to Kanji the Japanese use kana. Kana entails of a pair of syllabaries: "*hiragana*", used primarily for native Japanese words and grammatical elements, and katakana, used primarily for names, loanwords and scientific names. Most Japanese sentences contain a mixture of kanji and kana. For instance, the sentences below, both sentences say: "I went to Spain". But the upper one has a Kanji character in it whilst the lower one does not.

"スペインへ行きました。"

"すぺいんへ いきました。"

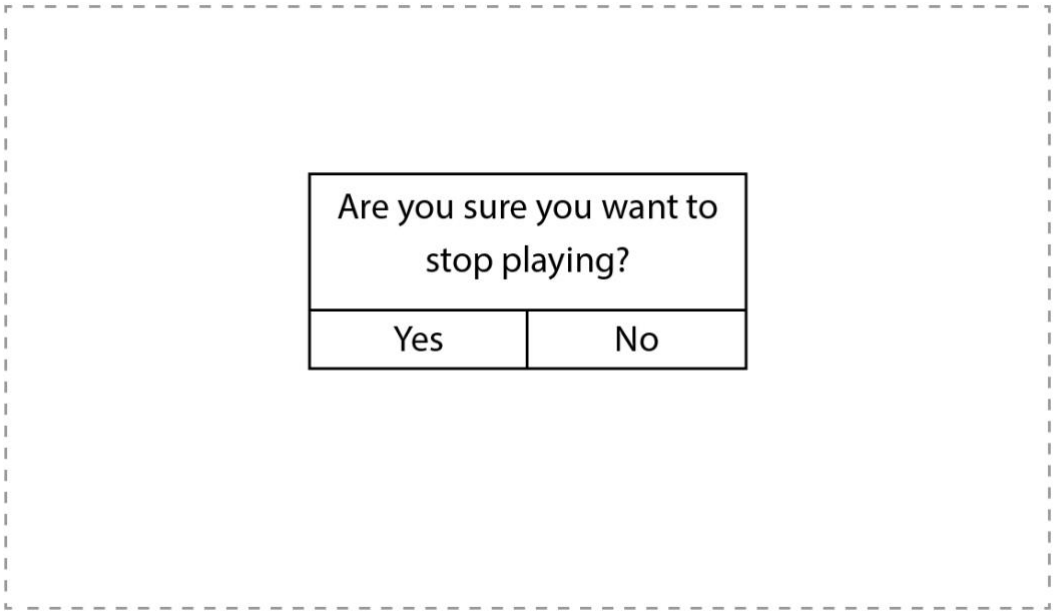


FIGURE 26 - DIALOGUE BOX WITH LATIN SCRIPT

"Yes"- and "No-button" are switched compared to Western games.

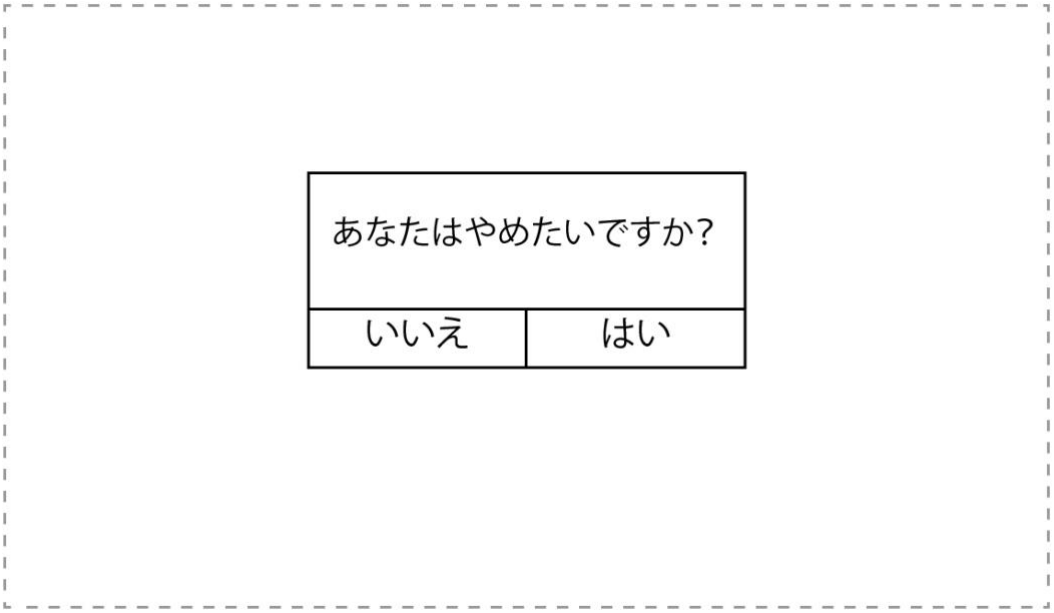


FIGURE 27 - DIALOGUE BOX WITH JAPANESE SCRIPT

6. LATIN AMERICA (LATAM)

Population	Online population	Gamers	Game Revenue (2016)	Share of Global Revenue (2016)	Game rating system	Language(s)	Script(s)	EF EPI Average:
639.5M	*367.6M*	*209.0M*	*4.1Bn*	*4,1%*	*ESRB, ClassInd, INCAA,*	*Spanish, (Brazilian) Portuguese*	*Alphabetical*	*50.78*

Latin America is commonly described as the entire continent of South America in addition to Mexico, Central America, and the islands of the Caribbean whose citizens predominantly speak a Romance language like Spanish or Portuguese. Even since independence from former colonizers, many of the Latin American countries have experienced similar trends, and they have some awareness of a common heritage with similar cultural behaviour. However, there are also significant dissimilarities between the countries. The citizens' social and cultural characteristics differ according to the constitution of the occupants before the

Iberian conquest, the timing and nature of European occupation, and their varying material endowments and economic roles. The population of Latin-America is around 639 million people with 367 million inhabitants connected online. The five countries in this region with the highest revenues are Brazil ($1.3 billion), Mexico ($1,1 billion), Argentina ($409 million), Colombia ($264 million) and Venezuela ($209 million). Brazil is ranked 72th on the NRI. Mexico is ranked 76th. Argentina is ranked 89th. Colombia is ranked 68th. Venezuela is ranked 108th. Argentina and Venezuela are high-income economies. Brazil, Mexico and Colombia upper-middle-income economies. Latin America has experienced a year-over-increase in revenue of 20.1% in 2015 – 2016 and an increase of 13.9% in 2016 – 2017.

GOVERNMENT AND LEGISLATION

What is the impact and influence of the government on the ICTs used in the country.

GOVERNMENT SUCCESS IN ICT PROMOTION

How successful is the government in promoting the use of Information and Communications Technology. (2014 – 2015)

[1 = not successful at all; 7 = extremely successful]

	Global Rank	**Value (Mean: 4.1)**
Brazil	122	3.2
Mexico	82	3.8
Argentina	133	2.9
Colombia	53	4.2
Venezuela	139	2.3

IMPORTANCE OF ICTS TO GOVERNMENT VISION OF THE FUTURE

To what extent does the government have a clear implementation plan for utilizing ICTs to improve the country's overall competitiveness. (2014 – 2015)

[1 = not at all – there is no plan; 7= to a great extent – there is a clear plan]

	Global Rank	**Value (Mean: 4.0)**
Brazil	121	3.1
Mexico	71	3.9
Argentina	137	2.6
Colombia	46	4.3
Venezuela	138	2.4

EFFECTIVENESS OF LAW-MAKING BODIES

How effective is the legislative process in the countries. (2014 – 2015)

[1 = not effective at all – it is deadlocked; 7 = extremely effective]

	Global Rank	**Value (Mean: 3.8)**
Brazil	129	2.4
Mexico	101	3.2
Argentina	132	2.3
Colombia	121	2.8
Venezuela	139	1.4

LAWS RELATING TO ICTS

How developed are the country's laws relating to the use of ICTs (e.g., e-commerce, digital signatures, consumer protection). (2014 – 2015)

[1 = not developed at all; 7 = extremely developed]

	Global Rank	Value (Mean: 3.9)
Brazil	80	3.7
Mexico	65	3.9
Argentina	114	3.0
Colombia	59	4.1
Venezuela	125	2.7

INTELLECTUAL PROPERTY PROTECTION

To what extent is intellectual property protected. (2014 – 2015)

[1 = not at all; 7 = to a great extent]

	Global Rank	Value (Mean: 4.3)
Brazil	83	3.7
Mexico	76	3.8
Argentina	124	3.0
Colombia	79	3.7
Venezuela	139	1.7

GOVERNMENT PROCUREMENT OF ADVANCED TECHNOLOGY PRODUCTS

To what extent do government purchasing decisions foster innovation.

(2014 – 2015)

[1 = not at all; 7 = to a great extent]

	Global Rank	**Value (Mean: 3.4)**
Brazil	94	3.1
Mexico	88	3.1
Argentina	134	2.5
Colombia	68	3.3
Venezuela	139	1.6

BUSINESSES

How well adapted are the country's businesses towards ICTs.

BUSINESS-TO-CONSUMER INTERNET USE

To what extent do businesses use the Internet for selling their goods and services to consumers. (2014 – 2015)

[1 = not at all; 7 = to a great extent]

	Global Rank	**Value (Mean: 4.5)**
Brazil	40	5.0
Mexico	73	4.3
Argentina	76	4.2
Colombia	56	4.7
Venezuela	105	3.9

CAPACITY FOR INNOVATION

To what extent do companies have the capacity to innovate. (2014 – 2015)

[1 = not at all; 7 = to a great extent]

	Global Rank	Value (Mean: 4.1)
Brazil	80	3.8
Mexico	66	4.0
Argentina	74	3.9
Colombia	93	3.7
Venezuela	135	2.9

FIRM-LEVEL TECHNOLOGY ABSORPTION

To what extent do businesses adopt to new technology. (2013 – 2014)

[1 = not at all; 7 = adopt extensively]

	Global Rank	Value (Mean: 4.7)
Brazil	57	4.8
Mexico	68	4.6
Argentina	115	4.0
Colombia	89	4.4
Venezuela	122	3.6

CONSUMERS

How do consumers relate to new ICTs? How many are connected to the Internet?

HOUSEHOLDS WITH A PERSONAL COMPUTER

Percentage of households equipped with a personal computer. (2014)

	Global Rank	Value
Brazil	66	52.0%
Mexico	78	38.3%
Argentina	55	62.1%
Colombia	75	44.5%
Venezuela	76	43.7%

HOUSEHOLDS WITH INTERNET ACCESS

Percentage of households with internet access at home. (2014)

	Global Rank	Value
Brazil	66	48.0%
Mexico	78	34.4%
Argentina	61	52.0%
Colombia	75	38.0%
Venezuela	79	34.2%

INTERNET USERS

Percentage of individuals in a country that use the Internet. (2014)

	Global Rank	Value
Brazil	58	57.6%
Mexico	78	44.4%
Argentina	48	64.7%
Colombia	66	52.6%
Venezuela	59	57.0%

FIXED BROADBAND INTERNET SUBSCRIPTIONS

Fixed broadband Internet subscribers per 100 population. (2014)

	Global Rank	Value
Brazil	63	11.7
Mexico	66	10.5
Argentina	52	15.6
Colombia	67	10.3
Venezuela	76	7.8

MOBILE BROADBAND INTERNET SUBSCRIPTIONS

Mobile broadband Internet subscribers per 100 population. (2014)

	Global Rank	Value
Brazil	24	78.2
Mexico	72	14.1
Argentina	53	53.6
Colombia	65	45.1
Venezuela	67	44.0

USE OF VIRTUAL SOCIAL NETWORKS

How widely are social networks used (e.g., Facebook, Twitter). (2014 – 2015)

[1 = not at all; 7 = used extensively]

	Global Rank	Value (Mean: 5.5)
Brazil	46	5.9
Mexico	91	4.5
Argentina	53	5.8
Colombia	89	5.4
Venezuela	61	5.7

AVAILABILITY OF LATEST TECHNOLOGIES

To what extent are the latest technologies available. (2014 – 2015)

[1 = not at all; 7 = to a great extent]

	Global Rank	Value (Mean: 4.8)
Brazil	85	4.5
Mexico	58	5.0
Argentina	126	3.7
Colombia	82	4.5
Venezuela	134	3.3

SOFTWARE PIRACY RATE

Unlicensed software unites as a percentage of total software units installed. (2013)

	Global Rank	Value
Brazil	38	50%
Mexico	46	54%
Argentina	67	69%
Colombia	41	52%
Venezuela	101	88%

IMPACT OF ICTS ON ACCESS TO BASIC SERVICES

To what extent do information and communication technologies enable access for all individuals to basic services (e.g., health, education, financial services, etc). (2014 – 2015)

[1 = not at all; 7 = to a great extent]

	Global Rank	Value (Mean: 4.3)
Brazil	111	3.5
Mexico	81	4.0
Argentina	109	3.5
Colombia	67	4.2
Venezuela	121	3.3

CULTURAL SENSITIVITY AND LOCAL RULES PROHIBITING CONTENT

Although sharing very similar cultures the local laws differ too much to describe a general text about banned content. Brazil and Argentine use their own content rating system, Venezuela banned all violent videogames and Mexico uses the American ESRB rating system.

Brazil

The "*Classificação Indicativa*", the (Brazilian) Advisory Rating System also known as "ClassInd" (http://www.justica.gov.br/seus-direitos/classificacao) is the appointed content rating system used in Brazil. It is mandatory to let your game be classified by ClassInd, before you are able to publish your game in Brazil. To request a rating, one will have to fill in a Portuguese request form which clarifies why your game is recommended to a certain rating. A preview of the game is obligatory when. After you sent your game for classification to the
"Department of Justice, Rating, Titles and Qualification". Unlike most countries there's no fee to get the classification and the process takes about 30 days.
There are no explicit guidelines that state which content may result in a refusal of classification.

Mexico

Like in America Mexico uses the ESRB as a classification system. However, compliance is voluntarily and the ESRB ratings are not

Argentina

"*Instituto Nacional de Cine y Artes Audiovisuales",* INCAA (http://www.incaa.gov.ar) is the government agency responsible for the classification of videogames since a legislation issued in 2005. However, no guidelines are available and the it is not clear what content results in the refusal of a classification.

Colombia

Colombia does not have a classification system nor specific laws regarding forbidden content in media, including videogames.

Venezuela

All violent videogames where it is the objective to shoot people are banned in Venezuela since March 2010. The prohibition on violent videogames was issued after a because of the nationwide violence in Venezuela. Manufacturing, distribution, selling, rental, exhibition and use of violent video games are strictly forbidden. More than 13,000 violent objects were confiscated and destroyed by the Venezuelan National Guard including plastic toy soldiers and videogames.

LANGUAGE

Argentina's official language is Spanish, Argentinian Spanish is a bit different from the Spanish spoken in Spain. The written language however is the same as the Spanish written in Spain. When localizing the game for the Brazilian market one should take in account that Brazilian Portuguese is noticeably different than standard Portuguese with dissimilar pronunciation, phrases and words

English	Brazilian Portuguese	Standard Portuguese
Train	Trem	Comboio
Bus	Ônibus	Autocarro
Suit	Terno	Fato
Ice Cream	Sorvete	Gelado
Refrigerator	Geladeira	Frigorífico
Brown	Marrom	Castanho

Writing system

Like most Romance languages the languages spoken and written in Latin America use the Latin Alphabetical writing system.

INFORMATION TABLE

Region	Population	Online population	Gamers	Game Revenue (2016)	Share of Global Revenue (2016)	Game rating system	Language(s)	Script(s)	EF EPI Average:
North America	360.4M	326.4M	198.0M	25.4Bn	25,5%	PEGI, ESBR	English, French	Alphabetical	N/A
Western Europe	404.5M	348.2M	184.6M	17.3Bn	17.4%	PEGI, USK, BBFC	German, French, English, Italian, Spanish	Alphabetical	57.05
Eastern Europe	353.0M	249.0M	152.0M	3.0Bn	3.0%	PEGI	Russian, Ukrainian, Czech, Polish	Alphabetical, Alphabetical (Cyrillic)	56.45
Middle East & Africa	1.6B	506.4M	301.3M	3.2Bn	3,2%	PEGI, GCAM, ESRA, KSCB	Arabic, Persian, Turkish, Kurdish Hebrew, English, French	Abjad, Alphabetical, Abiguda (Ethiopia)	46.24
Asia-Pacific	4.0B	1.6B	1.0B	46.6Bn	46.8%	SAPPRFT, CERO, EOCS, GRB, MOEA	Chinese (Simplified), Japanese, Korean, English, Chinese (Traditional)	Logographic, Alphabetical	52.58
Latin-America	639.5M	367.6M	209.0M	4.1Bn	4,1%	ESRB, ClassInd, INCAA,	Spanish, (Brazilian) Portuguese	Alphabetical	50.78

CONTENT RATING SYSTEMS

Content Rating System	Cost of classification	URL
BBFC - *British Board of Film Certification*	Ranges from £20,73 to around £ 1000,- You can calculate it on the website; http://www.bbfc.co.uk/industry-services/fee-calculator	http://www.bbfc.co.uk
CERO - *Computer Entertainment Rating*	No information available.	http://www.cero.gr.jp/e/
ClassInd - *Classificação Indicativa*	There is no rating fee.	http://www.justica.gov.br/seus-direitos/classificacao
EOCS - *Ethics Organization of Computer Software*	No information available.	http://www.sofurin.org
ESRA - *Entertainment Software Rating Association*	There is no rating fee.	http://en.ircg.ir
ESRB - *Entertainment Software Rating Board*	If the production costs of a game are below $250.000,- the fee is $800,- If the production costs exceed $250.000,- the fee is $4000,-	http://www.esrb.org
GRAC – *Game Rating & Administration Committee*	Depends on your platform and features. The price ranges between ₩ 60.000 (€47,-) and ₩ 4050.000 (€3187,-)	http://www.grac.or.kr/english/

GRAC - *Game Rating & Administration Committee (cont.)*	More information about the calculations can be found here; https://www.grac.or.kr/english/enforcement/enforcement.aspx	
INCAA - *Instituto Nacional de Cine y Artes Audiovisuales*	No information available.	http://www.incaa.gov.ar
MOEA - *Industrial Development Bureau*	No information available.	http://www.gamerating.org.tw/
NMC - *The National Media Council*	No information available.	http://nmc.gov.ae/en-us
PEGI - *Pan European Game Information*	Downloadable games under 250MB are certified for €250,- Games larger than 250MB with production costs less than €200.000,- are certified for € 1155,- and €1050 for each additional platform it is published on. If the production costs exceed €200.000,- the costs of a certification are €2100,- and € 1050 for each additional platform it is published on.	http://www.pegi.info/en/index/
SAPPRFT - *State Administration of Press, Publications, Radio, Film, and Television*	There is no rating fee.	http://www.sarft.gov.cn
USK - *Unterhaltungssoftware Selbstkontrolle*	Fees depend on the examination type and several other variables. The price ranges from €1200,- to € 3000,-. Smaller fees apply to Expensions, games equivalent to previous rated games and game trailers.	http://www.usk.de/en/

USK - *Unterhaltungssoftware Selbstkontrolle (cont.)*	More information about the calculations can be found here; http://www.usk.de/en/extramenue/login/publisher/material/cost-overview/	

DESIGNING A FLEXIBLE LOCALIZATION-FRIENDLY UI

Even when a developer chooses only to localize their game in LTR languages that use the Alphabetical script they should keep in mind that some phrases require more space in different languages. There are a few ways to deal with different word length depending on the situation.

FIGURE 28 – SELL-BUTTON IN ENGLISH AND DUTCH

Pictured on the left we see a "Sell-button". But when the text file is translated to Dutch the textbox has insufficient space to display it properly.

One could choose to make the buttons scale with the text width or chose to make the button larger like pictured on the right.

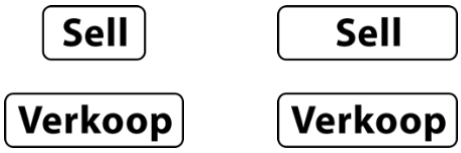


FIGURE 29 – SCALED SELL-BUTTONS IN ENGLISH AND DUTCH.

FIGURE 30 – SELL-BUTTONS WITH SCALED TEXT IN DUTCH

Another option would by dynamic scaling of the text. Developers tend to avoid this option because having many varied sizes of text within buttons isn't aesthetically pleasing.

When dealing with large amounts of text it is better to make the height or width scale with content placed in the textbox as pictured below.

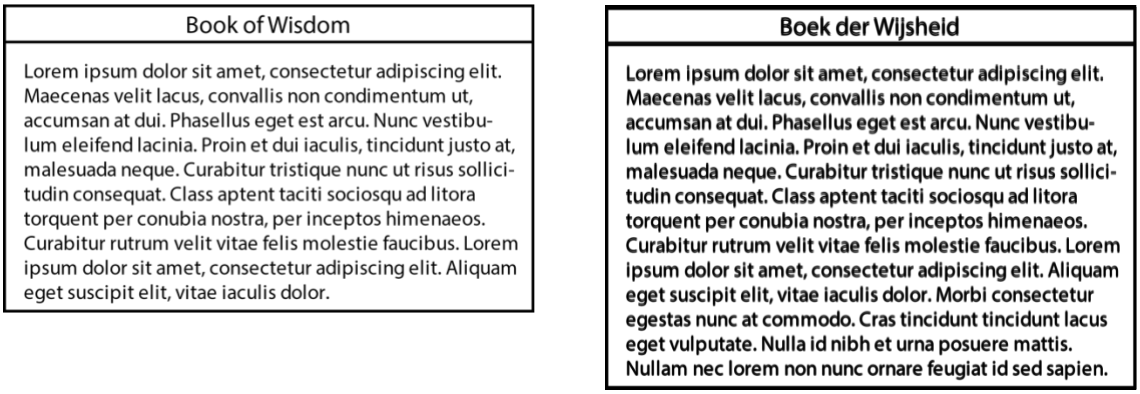


FIGURE 31 – TWO TEXTBOXES WITH LATIN SCRIPT. THE DUTCH TEXTBOX IS SCALED TO LET THE CONTENT FIT THE TEXTBOX

ICONS

Some developers save on translating textiles by changing a substantial amount of UI elements to icons. However, according to a case study by Jensen Harris of the Microsoft Office team unexperienced users did not use toolbars solely displaying icons with an exception of the "delete-key". This changed when the Microsoft Office added labels next to the icons. New icons and the rearrangement of the icons did not help. Michael Zuschlag Engineering Psychologist at UXmatters says that *"icons contrary to intuition, do not necessarily help the user find a menu item better than a text label alone. The use of icons and labels in an end user application program: an empirical study of learning and retention"*
Apart from a few examples like the "save button", "back button", "forward button" and the "magnifying glass" most icons tend to be unclear to the users' due to their association with different connotations across various interfaces and the cultural background of the users.

However, when the developer uses icons in their game. Next to the text some should also be mirrored to support RTL User Interface, anything that relates to time should be depicted as moving from right to left. For example, in a RTL layout, forward points to the left, and backwards points to the right.

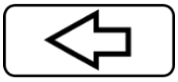


FIGURE 33 – LTR BACK BUTTON

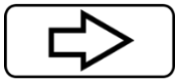


FIGURE 32 – RTL BACK BUTTON

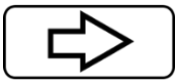


FIGURE 35 – LTR FORWARD BUTTON

FIGURE 34 – RTL FORWARD BUTTON

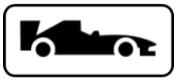


FIGURE 36 – LTR CAR ICON

Icons that show movement ought to be mirrored too. In a LTR user interface the car faces right, communicating *"moving forward"*

FIGURE 37 – RTL CAR ICON

In an RTL user interface, the race faces left to communicate *"moving forward"*

CHOSING WHICH ELEMENTS TO MIRROR

When making your UI ready for RTL languages developers ought to choose how to what extend they want to adjust their UI in order to display RTL languages. Dialogs in RTL languages must flow from right-to-left, which necessitates additional work to implement. Preferably the whole UI should be horizontally mirrored however, due to the substantial amount of work required for the developers tend to pick a middle ground where players are able to read the UI whilst not spending too much resources on completely overhauling the designed UI.

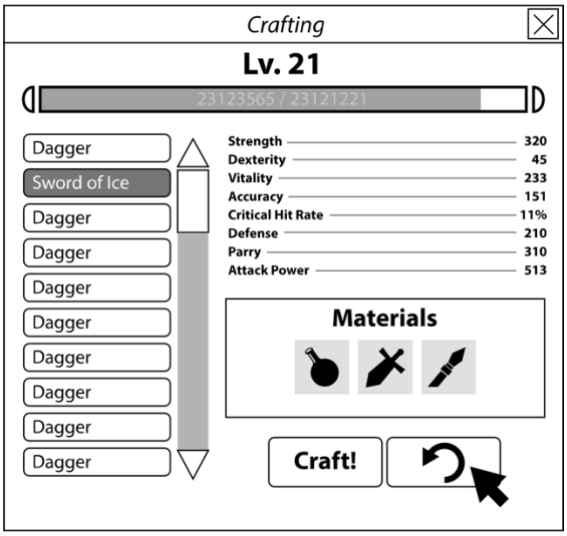


FIGURE 39 – CRAFT MENU WITH LATIN SCRIPT

FIGURE 38 – CRAFT MENU WITH ARABIC SCRIPT

Above the English UI next to the completely mirrored Arabic UI. All elements (including the position of the scrollbar and close-button and the direction of the experience bar) are mirrored to follow the conventions of the Arabic language.

If developers chose not to completely mirror the user interface they tend to choose a middle ground to make it as convenient as possible. They key to using this method is to be consistent, when one chooses to keep the scrollbar on the right side of textboxes one should do this with all dialogs where a scrollbar is needed.

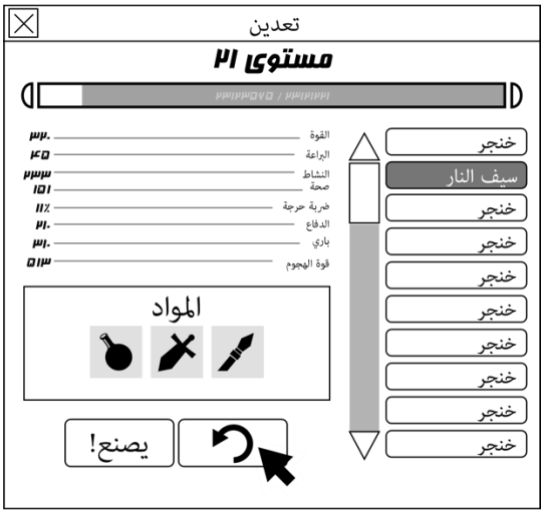


FIGURE 41 – ARABIC CRAFTING MENU

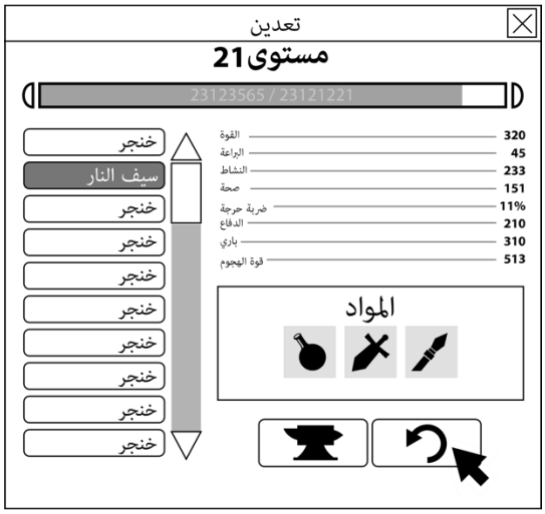


FIGURE 40 – ARABIC CRAFTING MENU

Above are two Arabic user interfaces pictured. Both are not ideal and don't follow all Arabic conventions but are readable by the user. Since the placement of scrollbars and the direction of experience bars are a lot of work most developers tend to leave these parts unchanged. In the Arab world both western and Arabic numbers are widely used and since many font sets don't support Arabic numbers developers use Western numbers.

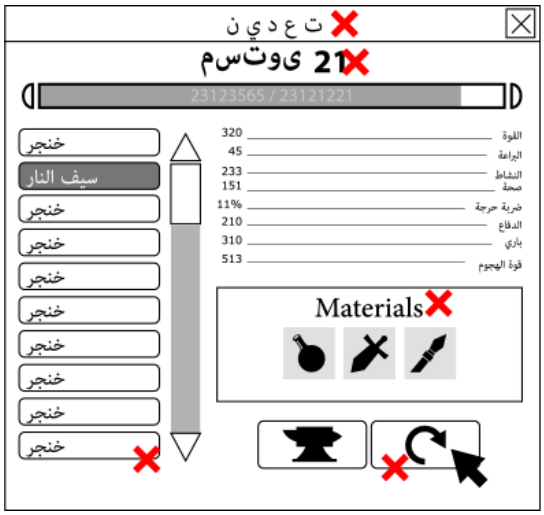


FIGURE 42 – ARABIC CRAFTING MENU DISCPLAYING SEVERAL COMMON MISTAKES

Above we see a part of the user interface with some common mistakes.;

- The Arabic letters are not connected and unreadable
- "Undo-button" should point backwards in time. The direction is counterclockwise. The icon should not be mirrored since the entire world uses the same conventions.
- The buttons with Arabic text are not outlined RTL

FIGURE 43 - CORRECT WAY OF DISPLAYING PUNCTUATION MARKS

Many text engines can display the Arabic text in the correct way but end up displaying the text wrong. This mostly happens because the Arabic text is RTL but the punctuation marks are displayed LTR since they are the same in Alphabetical script.

To avoid much tinkering on the user interface developers, try to centre as much as possible so they don't have to change it depending on the language displayed in text objects.

For instance, in this case of a dialogue box where the player has to choose between two options. Developers have to create three different dialog boxes depending on the languages used.

あなたはやめたいですか？	
いいえ	はい

Are you sure you want to stop playing?	
Yes	No

هل أنت متاكد أنك تريد التوقف؟	
لا	نعم

Figure 44 – Three dialogue boxes in Japanese, English and Arabic

This is solved by placing the centering the text and putting the options underneath each other instead of next to each other.

あなたはやめたいですか？
はい
いいえ

Are you sure you want to stop playing?
Yes
No

هل أنت متاكد أنك تريد التوقف؟
نعم
لا

Figure 45 – Three dialogue boxes in Japanese, English and Arabic

INFORMATION TABLES

NORTH AMERICA

Population	Online population	Gamers	Game Revenue (2016)	Share of Global Revenue (2016)	Game rating system	Language(s)	Script(s)	EF EPI Average:
360.4M	*326.4M*	*198.0M*	*25.4Bn*	*25,5%*	*PEGI, ESBR*	*English, French*	*Alphabetical*	*N/A*

Year-over-year revenue growth

2015 – 2016	+4.1%
2016 - 2017	+4.0%

WESTERN EUROPE

Population	Online population	Gamers	Game Revenue (2016)	Share of Global Revenue (2016)	Game rating system	Language(s)	Script(s)	EF EPI Average: *(Excluding the UK)*
404.5M	*348.2M*	*184.6M*	*17.3Bn*	*17.4%*	*PEGI, USK, BBFC*	*German, French, English, Italian, Spanish*	*Alphabetical*	*57.05*

Year-over-year revenue growth

2015 – 2016	+4.4%
2016 - 2017	+4.8%

EASTERN EUROPE

Population	Online population	Gamers	Game Revenue (2016)	Share of Global Revenue (2016)	Game rating system	Language(s)	Script(s)	EF EPI Average:
353.0M	*249.0M*	*152.0M*	*3.0Bn*	*3.0%*	*PEGI*	*Russian, Ukrainian, Czech, Polish*	*Alphabetical, Alphabetical (Cyrillic)*	*56.45*

Year-over-year revenue growth

2015 – 2016	+7.3%
2016 - 2017	+8.8%

MIDDLE EAST & AFRICA

Population	Online population	Gamers	Game Revenue (2016)	Share of Global Revenue (2016)	Game rating system	Language(s)	Script(s)	EF EPI Average: (Except Nigeria)
1.6B	*506.4M*	*301.3M*	*3.2Bn*	*3,2%*	*PEGI, GCAM, ESRA, KSCB*	*Arabic, Persian, Turkish, Kurdish Hebrew, English, French*	*Abjad, Alphabetical, Abiguda (Ethiopia)*	*46.24*

Year-over-year revenue growth

2015 – 2016	+26.2%
2016 - 2017	+25.0%

ASIA-PACIFIC

Population	Online population	Gamers	Game Revenue (2016)	Share of Global Revenue (2016)	Game rating system	Language(s)	Script(s)	EF EPI Average: (Except Australia)
4.0B	*1.6B*	*1.0B*	*46.6Bn*	*46.8%*	*SAPPRFT, CERO, EOCS, GRB, MOEA*	*Chinese (Simplified), Japanese, Korean, English, Chinese (Traditional)*	*Logographic, Alphabetical*	*52.58*

Year-over-year revenue growth

2015 – 2016	+10.7%
2016 - 2017	+9.2%

LATIN AMERICA

Population	Online population	Gamers	Game Revenue (2016)	Share of Global Revenue (2016)	Game rating system	Language(s)	Script(s)	EF EPI Average:
639.5M	*367.6M*	*209.0M*	*4.1Bn*	*4,1%*	*ESRB, ClassInd, INCAA,*	*Spanish, (Brazilian) Portuguese*	*Alphabetical*	*50.78*

Year-over-year revenue growth

2015 – 2016	+20.1%
2016 - 2017	+13.9%

WORKS CITED

Akdeniz, Y., & Altıparmak, K. (2008, May 5). *Cyber Rights.* Retrieved from Internet: Restricted Access: www.cyber-rights.org/reports

AL Hamrani , K. (2008). *Mission and Vision of the U.A.E. Censorship Board.* National Media Council and a Ministry of Culture, Youth and Community . Dubai: U.A.E. Censorship Board.

Barau, A. S. (2008, June). *Mission and Vision of the Kano State Censorship Board.* Retrieved from Researchgate: https://www.researchgate.net/publication/268813777

BBFC. (n.d.). *BBFC Classification Guidelines 2014.* Retrieved from BBFC: http://www.bbfc.co.uk/sites/default/files/attachments/BBFC%20Classification%20Guidelines%202014_5.pdf

Borgwaldt, S., & Joyce, T. (2013). *Typology of Writing Systems.* Amsterdam/Philadelphia: John Benjamins Publishing.

Brazilian National Secretariat of Justice. (2012). *Rating Guide - Ministério da Justiça.* Brazilian National Secretariat of Justice, Brasília. Retrieved from www.justica.gov.br: http://www.justica.gov.br/seus-direitos/classificacao/guia-pratico/practical-guide.pdf

Computer Entertainment Rating Organization (CERO). (2011, September 22). *Regulations.* Retrieved from CERO Code of Ethics: www.cero.gr.jp/e/regulation.pdf

Doha Centre for Media Freedom. (2015, June 25). *Media laws and regulations.* Retrieved from Doha Centre for Media Freedom:

http://www.dc4mf.org/en/content/media-laws-and-regulations-gcc-countries-6221

Doucet, L. (2014, 08 13). *Was Localizing Defender's Quest Worth It?* Retrieved from Gamasutra: http://www.gamasutra.com/blogs/LarsDoucet/20140813/223350/Was_Localizing_Defenders_Quest_Worth_It.php

EF English Proficiency Index 2016. (2016). Retrieved from EF English Proficiency Index: http://media2.ef.com/__/~/media/centralefcom/epi/downloads/full-reports/v6/ef-epi-2016-english.pdf

Game Rating and Administration Committee . (2013, February 2013). *Rating Review Regulations.* Retrieved from Game Rating and Administration Committee : https://www.grac.or.kr/download/FileDown.aspx?fileName=Rating+Review+Regulations.pdf

General Commission for Audiovisual Media (GCAM). (2013). *اللائحة التنفيذية لتقديم خدمة المشاركة بالألعاب الالكترونية.* Retrieved from General Commission for Audiovisual Media (GCAM): http://www.gcam.gov.sa/ar/Documents/اللائحة%20التنفيذية%20لتقديم%20خدمة%20المشاركة%20بالألعاب%20الالكترونية.pdf

General Commission For Audiovisual Media (GCAM). (2014). *اللائحة التنفيذية للترخيص لشركات ومؤسسات الإنتاج الإعلامي المرئي والمسموع.* Retrieved from General Commission For Audiovisual Media (GCAM):

http://www.gcam.gov.sa/ar/Documents/اللائحة%20التنفيذية%20للترخيص%20لشركات%20ومؤسسات%20الإنتاج%20الإعلامي%20المرئي%20والمسموع%20.pdf

Greenspan , D. (2013, December 1). *MASTERING THE GAME Business and Legal Issues for Video Game Developers.* WIPO Publication.

Industrial Development Bureau (MOEA). (n.d.). *Gaming Software Rating Management Regulations.* Retrieved from Gamerating.org.tw: http://www.gamerating.org.tw/gsgi_way.php

Iphone App Localization: 7x More Downloads By Localizing App Keywords. (2013, 05 08). Retrieved from MAKE APP Magazine: http://makeappmag.com/iphone-app-localization-keywords/

Jensen Harris. (n.d.). *The Importance Of Labels.* Retrieved from Microsoft Blog: https://blogs.msdn.microsoft.com/jensenh/2005/11/01/the-importance-of-labels/

Kim, R. (2012, 10 01). *Distimo: app translation can pay off, especially in Asia*. Retrieved from Gigaom: https://gigaom.com/2012/10/01/distimo-app-translation-can-pay-off-especially-in-asia/

Mueller, H. (2016, June). THE CENSORSHIP OF GERMAN VIDEO GAMES: the effects of national sensitivity to violence on entertainment content.

Natsui, T. (2003). *CYBERCRIMES IN JAPAN: RECENT CASES, LEGISLATIONS, PROBLEMS AND PERSPECTIVES.* Meiji University. Tokyo: Netsafe. Retrieved from cyberlaw.la.coocan.jp

Neogames. (2015, August). *Neogames.* Retrieved from China's Regulatory Environment for Games: http://www.neogames.fi/wp-

content/uploads/2015/11/Chinas-Regulatory-Environment-for-Games-2015_18112015.pdf

Newzoo. (2016, June 1). *GLOBAL GAMES MARKET 2016.* Retrieved from Newzoo: http://resources.newzoo.com/global-games-market-report

PEGI. (2015, June 6). *Anual Report 2015.* Retrieved from INTERACTIVE SOFTWARE FEDERATION OF EUROPE: http://www.isfe.eu

Telecommunications Regulatory Authority (TRA). (2017). *PROHIBITED CONTENT CATEGORIES* . Retrieved from Telecommunications Regulatory Authority (TRA): http://www.du.ae/Files/TRAPolicy.pdf

USK. (2016, June 1). *Kriterien für die jugendschutzrechtliche Bewertung von - USK.* Retrieved from USK: http://www.usk.de/fileadmin/documents/Publisher_Bereich/2016-06-10%20Leitkriterien%20USK%20EN.pdf

World Economic Forum. (2017). *The Global Information Technology Report 2016.* Retrieved from World Economic Forum: www3.weforum.org/docs/GITR2016/WEF_GITR_Full_Report.pdf

문화체육관광부 (게임콘텐츠산업과). (2016, December 12). *GAME INDUSTRY PROMOTION ACT.* Retrieved from 법제처 국가법령정보센터: http://www.law.go.kr