



User Experience In IDNA

TF-AIDN, June/2014

Presented by ...

AbdulRahman I. Al-Ghadir
Researcher in SaudiNIC



Outline

- Context
- Methodology
- Results
- Examples



Context (Arabic IDN)

- This assessment is being performed on IDNA **from an Arabic user point of view**. Therefore, any referencing to IDNA during this presentation, it's for Arabic IDNA.
- The main purpose is to assess end user experience. In other word, we look to IDNA from user point of view.



The Methodology

- Brain Storming What it can be part of IDNA report.
- Literature Review Look at previous efforts and reports.
- Scope Definition What we can exam in a given period of time.
- Test Case Modeling Build a test case model.
- Test Case Creation Generate test cases based on the model
- Tools Creation Develop a system to manipulates test cases.
- Execution Apply the test cases and collect results.



Methodology: Brain storming

- Thinking about what it can be part of IDNA report.

Browsers		Email Clients		Office Apps		Social Media		Search Engines	
View Mode	Domain Recognition	Compose New Email	Compose New Mail	Create New Document	Create New Sheet	Post New Status	Post New Message	Search and Click	Search and Click
Edit mode	Suggestion (auto complete)	Compose New Mail	Compose New Mail	Create New Document	Create New Sheet	Post New Status	Post New Message	Search and Click	Search and Click
View click	Domain with protocol	Compose New Mail	Compose New Mail	Create New Document	Create New Sheet	Post New Status	Post New Message	Search and Click	Search and Click
Insert - automation	Numbers left to right	Compose New Mail	Compose New Mail	Create New Document	Create New Sheet	Post New Status	Post New Message	Search and Click	Search and Click
Domain	path	Compose New Mail	Compose New Mail	Create New Document	Create New Sheet	Post New Status	Post New Message	Search and Click	Search and Click
Document body (email,browsers)	Copy/Baste	Compose New Mail	Compose New Mail	Create New Document	Create New Sheet	Post New Status	Post New Message	Search and Click	Search and Click
Display	SSL icon	Compose New Mail	Compose New Mail	Create New Document	Create New Sheet	Post New Status	Post New Message	Search and Click	Search and Click
Topics	Email Recipient	Compose New Mail	Compose New Mail	Create New Document	Create New Sheet	Post New Status	Post New Message	Search and Click	Search and Click
Functionality	Shell commands	Compose New Mail	Compose New Mail	Create New Document	Create New Sheet	Post New Status	Post New Message	Search and Click	Search and Click
Service interaction	Domain	Compose New Mail	Compose New Mail	Create New Document	Create New Sheet	Post New Status	Post New Message	Search and Click	Search and Click
SSL development library	Domain	Compose New Mail	Compose New Mail	Create New Document	Create New Sheet	Post New Status	Post New Message	Search and Click	Search and Click
Regular Expression	Domain	Compose New Mail	Compose New Mail	Create New Document	Create New Sheet	Post New Status	Post New Message	Search and Click	Search and Click
Supportive	Domain	Compose New Mail	Compose New Mail	Create New Document	Create New Sheet	Post New Status	Post New Message	Search and Click	Search and Click



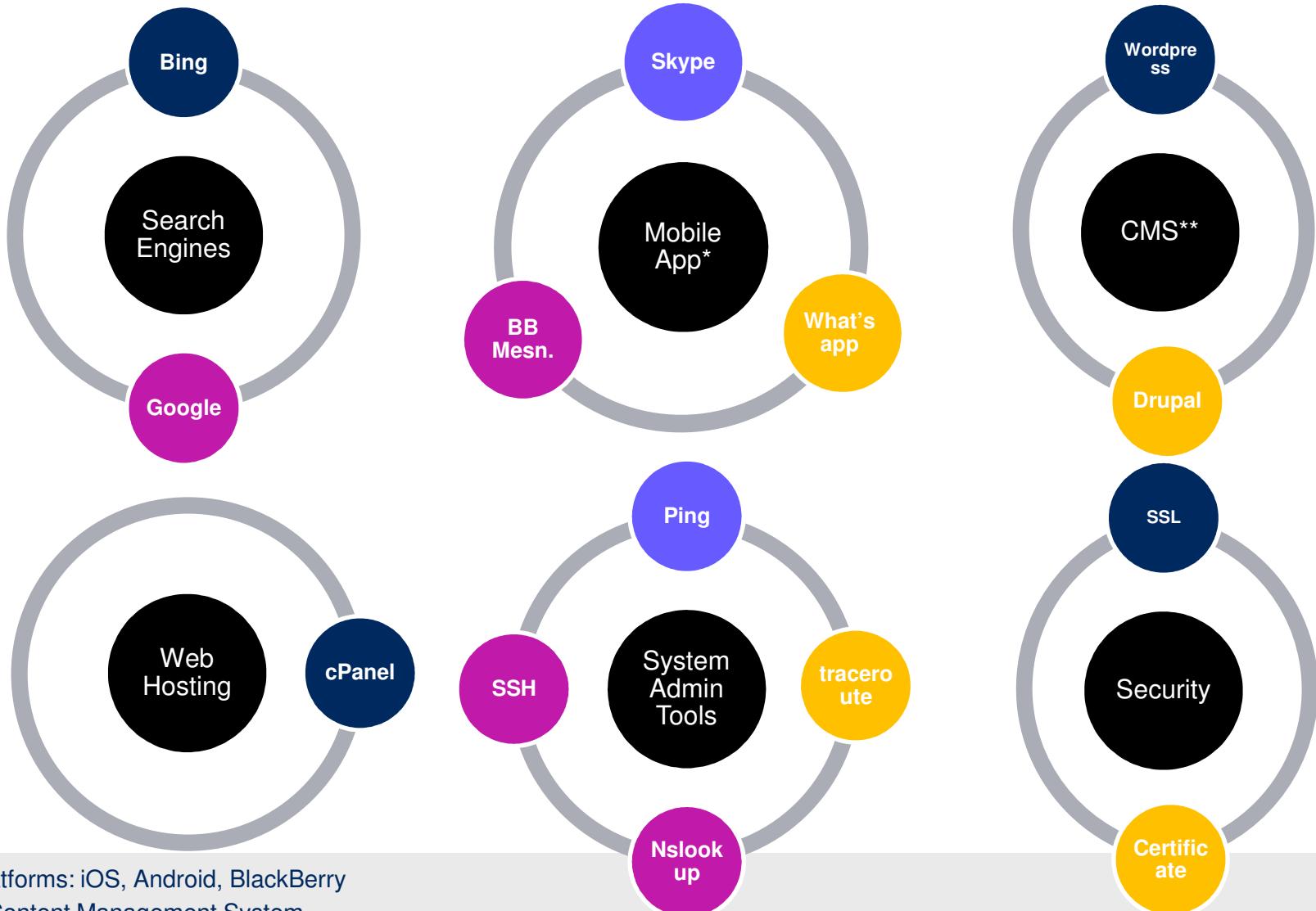
Methodology: Scope definition

- What can be part of IDNA **report** is HUGE +1000 things!
- We have selected about ~2% to be assessed.
- Our role in selection is: most popular, and used products.





Methodology: Scope definition





Methodology: Test Case Model

- The test case model used to generate the test cases. It consists of five components.

Behavior

- How a tester should behave.

Input

- The IDN string being tested.

Target

- What is the environment, product and which part of the product.

Checks

- Yes/No questions being asked about what is concerned.

Results

- Acceptable, Not acceptable or Not applicable.



Methodology: Test case generation

- We Generate about ~ 190 test case so far.

Browsers			
Firefox	Address bar - Test Cases	Search bar - Test Cases	URL Link - HTML/JS
Chrome	View Mode	Places	URL Link
Safari	Edit mode	Auto recognition	URL Link
IE	Copy & Paste	Copy & Paste	URL Link
Email Clients			
Gmail	Compose	Compose	URL Link
Outlook	Compose	Compose	URL Link
Thunderbird	Compose	Compose	URL Link
Mac Mail	Compose	Compose	URL Link
Office Apps			
Word	Test Cases	Test Cases	URL Link
Social Media			
Facebook	Address bar - Test Cases	Search bar - Test Cases	URL Link
Twitter	Create account using	Create account using	URL Link
LinkedIn	Compose	Compose	URL Link
Instagram	Compose	Compose	URL Link
Search Engines			
Google	Search input - Test Cases	Search result - Test Cases	URL Link
Bing	Use search bars like site:	Advance Search (XAND)	Protocol and icon



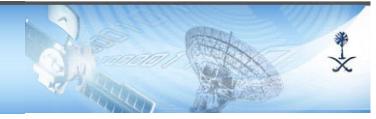
Methodology: Control system

- Developed a test case control web application

IDN user experience assessment project

Home / Test Cases

test Case id	input id	target	category id	user id	status	Actions
133	first,Fifth-sixth.777.xn----btddbpe8cpm6cb3moa.منال.ال سعودية.	Google search: Firefox (as browser):4/2014: search field	Search Engines	alhamed	new	
134	first,Fifth-sixth.777.xn----btddbpe8cpm6cb3moa.منال.ال سعودية.	Google search: Firefox (as browser):4/2014: search field	Search Engines	alhamed	new	
135	first,Fifth-sixth.777.xn----btddbpe8cpm6cb3moa.منال.ال سعودية.	Google search: Firefox (as browser):4/2014: search field	Search Engines	alhamed	new	
136	first,Fifth-sixth.777.xn----btddbpe8cpm6cb3moa.منال.ال سعودية.	Google search: Firefox (as browser):4/2014: advance search page: search field	Search Engines	alhamed	new	
137	first,Fifth-sixth.777.xn----btddbpe8cpm6cb3moa.منال.ال سعودية.	Bing search: Firefox (as browser):4/2014: advance search page: search field	Search Engines	alhamed	new	
138	first,Fifth-sixth.777.xn----btddbpe8cpm6cb3moa.منال.ال سعودية.	Bing search: Firefox (as browser):4/2014: search field	Search Engines	alhamed	new	
139	first,Fifth-sixth.777.xn----btddbpe8cpm6cb3moa.منال.ال سعودية.	Bing search: Firefox (as browser):4/2014: search field	Search Engines	alhamed	new	
140	first,Fifth-sixth.777.xn----btddbpe8cpm6cb3moa.منال.ال سعودية.	Bing search: Firefox (as browser):4/2014: search field	Search Engines	alhamed	new	
141	خامس.-أول.ثاني.ثالث.xn----mgbcz8a-.منال.ال سعودية.xn----ymcbcq8b4b3fj-.منال.ال سعودية.xn----mohcz8a-.منال.ال سعودية.	Bing search: Firefox (as browser):4/2014: advance search page: search field	Search Engines	alhamed	new	



Methodology: test execution

- Perform the test cases and collect results.
 - Answer the check questions.
 - Upload screenshots of failed checks.

Test Cases

Test Case Details Test Case Categories Test Case Comment User Change Password Logout

tsa

IDN user experience assessment project

Name : Test Case 1 Edit

Test Case ID: 12

Behaviour:

1. Click the view icon of this case.
2. Click on the first test by double click on the test.
3. Click on the first testable or not in the following points:
View media
Auto recognition
Accessible

Input ID: target

target: Outlook : OX 10.9 (maverick), version 2010: message field (viewing media)

category_id: Email Client

User ID: ahmed

user_name: ahmed

user_email: ahmed@itc.gov.sa

reachable_info: N/A = Not Reachable

reachable: N/A = Not Reachable

view_media_info: N/A = Not Acceptable

view_media: N/A = Not Acceptable

edit_media_info: N/A = Not Acceptable

edit_media: N/A = Not Acceptable

auto_complete_info: N/A = Not Acceptable

Auto complete: N/A = Not Acceptable

Copy paste_info: N/A = Not Acceptable

Copy Paste: N/A = Not Acceptable

Forcing alignment_info: N/A = Not Acceptable

Forcing alignment: N/A = Not Acceptable

SSB_info_info: N/A = Not Acceptable

SSB_info: N/A = Not Acceptable

prestel_info_info: N/A = Not Acceptable

prestel_info: N/A = Not Acceptable

url_sharpen_info: N/A = Not Acceptable

URL_sharpen: N/A = Not Acceptable

clickable_info: N/A = Not Acceptable

Clickable: N/A = Not Acceptable

url_auto_responsive_info: N/A = Not Acceptable

URL auto responsive: N/A = Not Acceptable

Screen 1:

Screen 2:

Screen 3:

Screen 4:

Screen 5:

Save

screen1.jpg



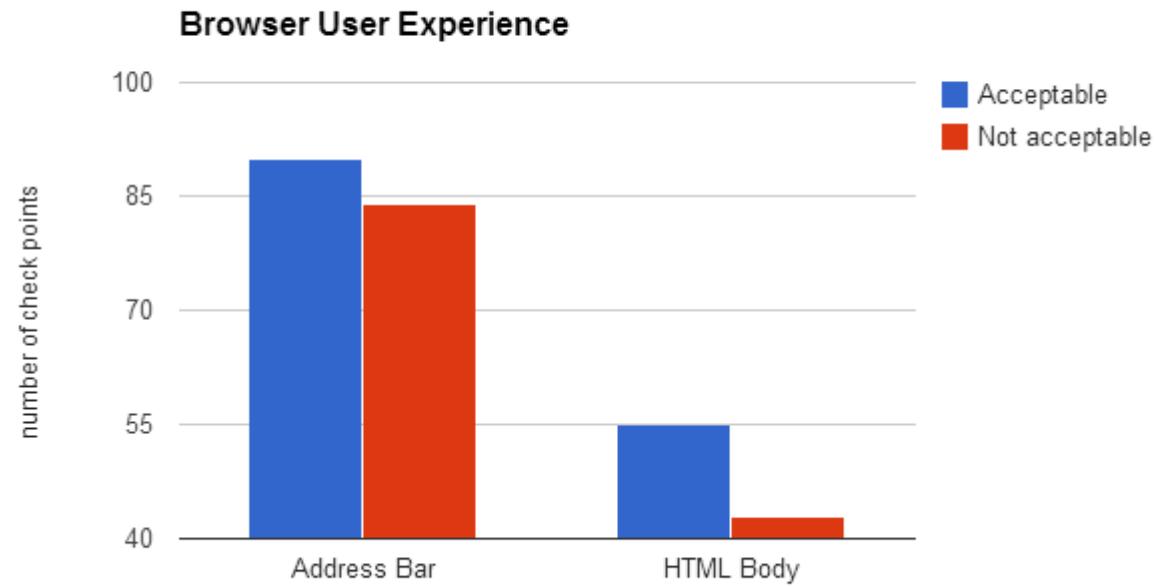
Results

- The assessment project is not finished yet. So far, we accomplished %85 of it.
- The result built on %85 of the total assessment test cases.
- The completed report can be found on our website:
<http://nic.sa/en/cat/documentlibrary>



Results: Browsers result summary

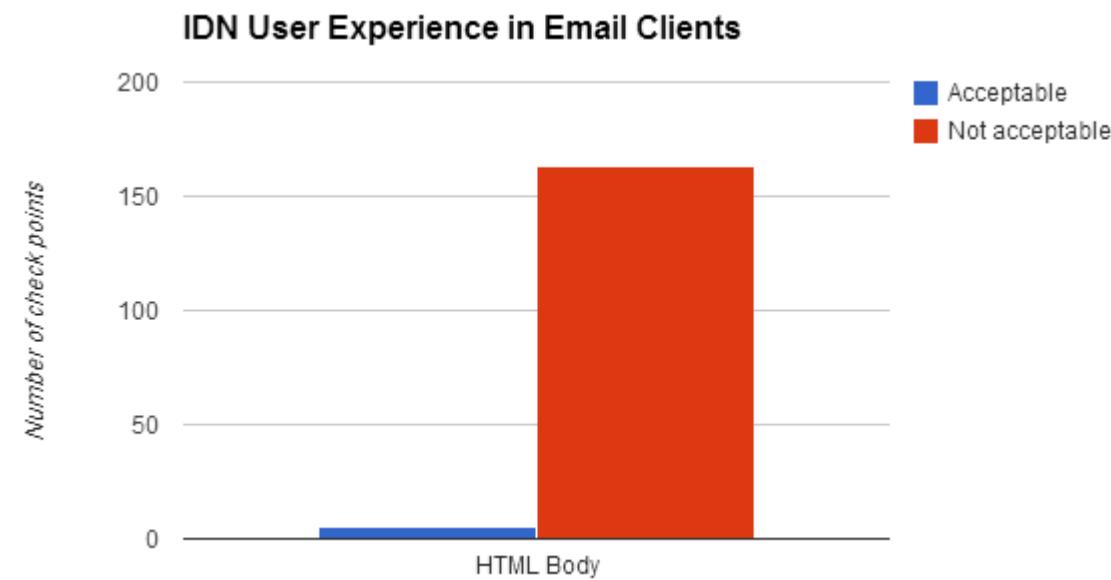
■ Browsers





Results: Email clients result summary

- Email Clients
 - This is not IDN Email testing. It is IDN in email messages.

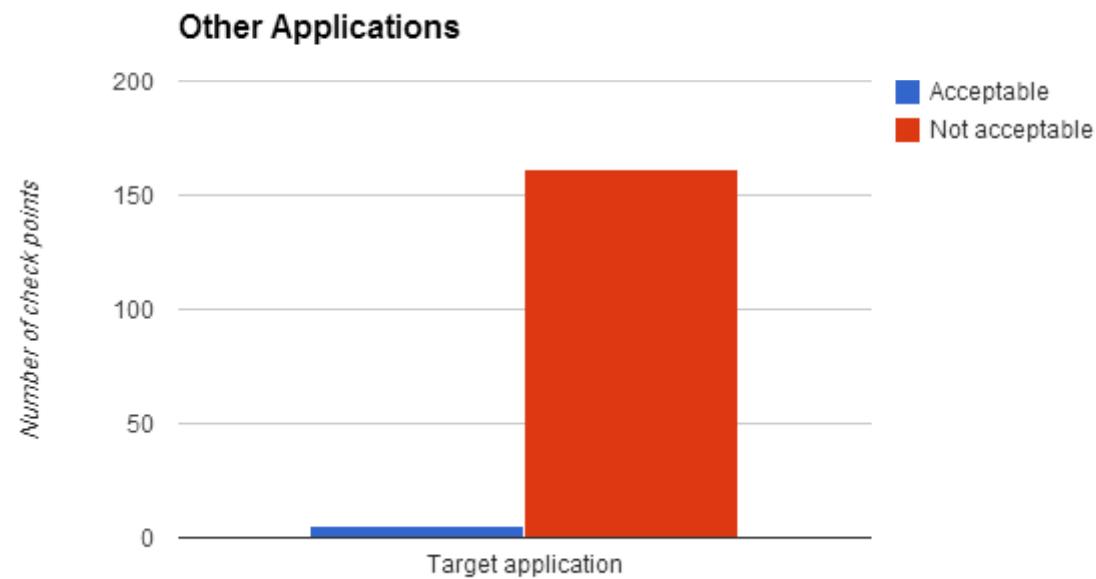




Results: Other applications/tools result summary

■ Other applications/tools

- Office suites, system admin tools, Search Engines, Mobile Apps, Content Management System (CMS), Web Hosting management tool, Security.





Examples

- Chrome refuse to deal with IDN:



Google





Examples

- Chrome refuse to deal with IDN:

The screenshot shows a Google search results page. The search bar contains the query "first.ثاني.ثالث.رابع.Fifth-sixth.777.xn----btddbpe8cpm6cb3moa.مثال.ال سعودية." followed by "&oq=first.ثاني.ثالث.رابع." Below the search bar, the "Web" tab is selected. The search results area displays the message: "Your search - first.ثاني.ثالث.رابع.Fifth-sixth.777.xn----btddbpe8cpm6cb3moa.مثال.ال سعودية. - did not match any documents." There are also suggestions and a list of tips for improving the search.

Your search - first.ثاني.ثالث.رابع.Fifth-sixth.777.xn----
btddbpe8cpm6cb3moa.مثال.ال سعودية. - did not match any documents.

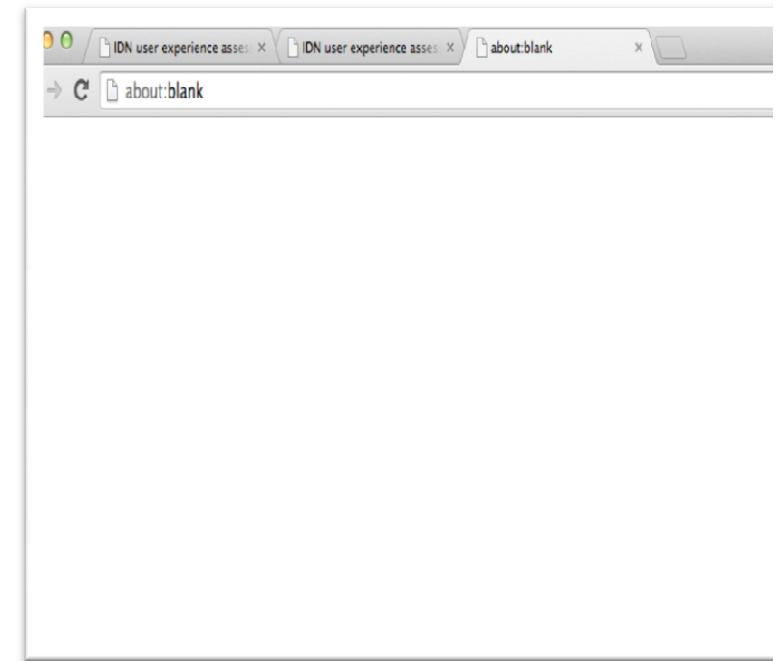
Suggestions:

- Make sure all words are spelled correctly.
- Try different keywords.
- Try more general keywords.



Examples

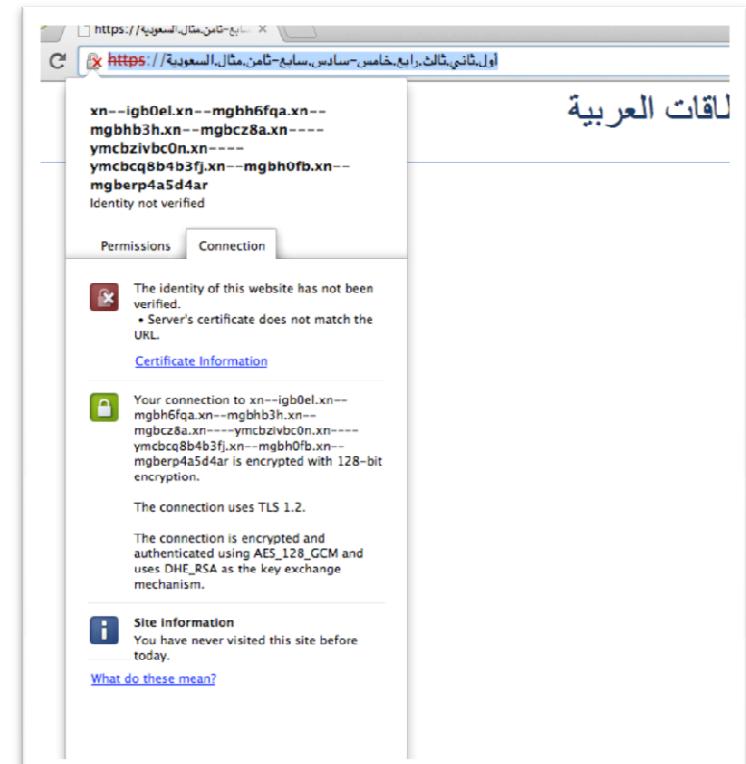
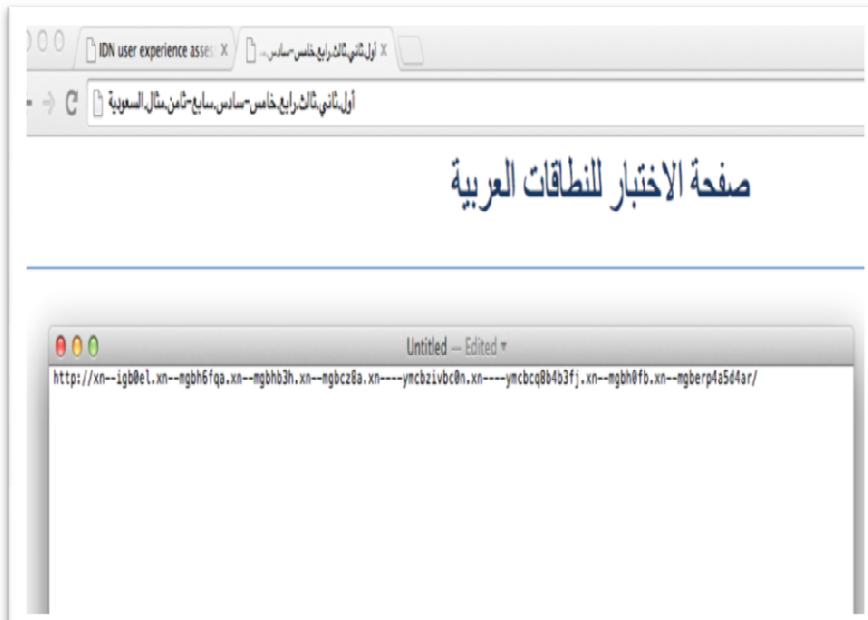
- Chrome refuse to deal with IDN:





Examples

- Chrome refuse to deal with IDN:



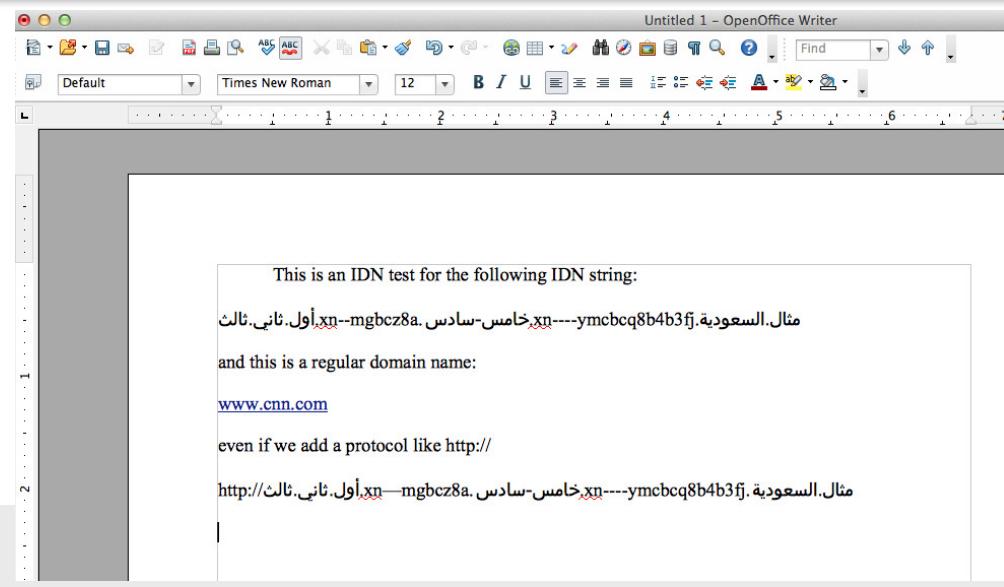


Examples

■ Microsoft Word



■ Open Office





Examples

■ Google search

The screenshot shows a Google search results page with the query "مملكة السعودية". The results include:

- A link to "Try Google Webmaster Tools" (www.google.com/webmasters/) with a "Google promotion" banner.
- A link to a "Login" page for an IDN user experience assessment project.
- A link to "Index of مملكة / - Parent Directory" showing files like "index.html", "index.htm", "index.php", and "index.cgi".

■ Google advance search

The screenshot shows a Google search results page with the query "site: %D8%A7%D9%84%D8%B3%D8%B9%D9%88%D8%AF%D9%8A%". The results include:

- A link to "Try Google Webmaster Tools" (www.google.com/webmasters/) with a "Google promotion" banner.
- A link to the "الاتصالات السعودية" (STC) website (www.stc.sa). The page features Arabic text about STC's mission and services.
- A link to the "برئاسة الخدمات (الاتصالات الحكومية)" (President of the Communications Sector) website (www.saudi-government.org.sa). The page features Arabic text about the president's role and responsibilities.

The screenshot shows the Google Advanced Search interface with the following settings:

- Search term: site: مملكة السعودية
- language: any language
- region: any region
- last update: anytime
- site or domain: مملكة السعودية
- terms appearing: anywhere in the page
- SafeSearch: Show most relevant results
- reading level: no reading level displayed
- file type: any format
- usage rights: not filtered by license

Advanced Search



Examples

- System Admin Tools: SSH

```
User-2:~ Alhamed$  
User-2:~ Alhamed$  
User-2:~ ssh alhamed@アル・ナシル・カイロ・xn--mgbcz8a.xn----ymcbcq8b4b3fj.z  
The authenticity of host ' (::1)' can't be established.  
RSA key fingerprint is 76:c7:22:73:30:ed:90:c6:5c:a4:71:91:e1:03:08:29.  
Are you sure you want to continue connecting (yes/no)? yes  
Warning: Permanently added '' (RSA) to the list of known hosts.  
Password:  
bash: アル・ナシル・カイロ・xn--mgbcz8a.xn----ymcbcq8b4b3fj.z: command not found  
User-2:~ Alhamed$
```



Conclusion

- User acceptance for IDNA is less than 1%. (Excluding address bar in some web browsers).
- It's been more than 10 years since the publication of IDNA RFCs, it's less than 1%!
- IDNA ≠ browsers address bars.
- How long do we need for Internationalized Email (IDN Email) to be fully deployed, are we going to wait 10+ years to get a 1% acceptance of IDN Email.
- RFCs are not enough, we need accelerators. As it is happening in other internet converting topics (e.g. IPv6)