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The Evolution of Dictionaries of Economics: from a Glossary to a Lexicographical Information System

Abstract

Dictionaries of economics have evolved over time. In the past, most dictionaries were similar to glossaries and were in printed form. In this Internet era, some printed dictionaries have evolved into online dictionaries with various number of technological features. However, the evolution of these dictionaries has not taken into account the evolving needs and situations of the users. Consequently, as we can see from the review of the current online dictionaries of economics, these dictionaries have failed to satisfy the needs of the users, particularly the spoken text reception needs. This paper presents some principles in creating a future dictionary of economics that can satisfy the needs related to the situation when a non-native English speaker is listening to a business news in the English language. The future dictionary or the proposed dictionary in this paper takes the concept of a lexicographical information system (LIS) that integrates several components into the dictionary. The four components discussed are a voice recognition function, a tooltip, an auto-summarize function, and a definition-finder. This paper shows why these four components are needed and how they can solve the users' lexicographical problems correctly, promptly, and conveniently.

1. Introduction

Lexicography has gone through significant transformations over the centuries. In the English language, the origins of English lexicography can be traced back to the Old English period. According to Sauer (2009: 21) in the seventh and eighth centuries, the practice arose of inserting explanations (or 'glosses') of difficult words in the Latin manuscripts. These glosses were later gathered together into 'glossaries'. Sauer (2009: 21-22) mentions three types of glossaries found in the Old English: (1) 'glossae collectae' for the glosses arranged according to the order in which they were read in texts, (2) 'alphabetical glossaries' for the glosses that are arranged alphabetically, and (3) 'class glossaries' for the glosses arranged according to semantic fields. In the further development, lexicographers tend to favour the alphabetical glossaries, and this tendency stills become the dominant feature in English lexicography.

The preference for glossaries, particularly bilingual glossaries, in English lexicography, is still prevalent until now. Hoare (2009: 47) found that in the British Library, of an estimated two thousand works bearing the title dictionary, very many are simply bilingual or multilingual word lists (i.e. similar to glossaries). Given the recent and rapid changes in languages and knowledge, it is necessary to have a dictionary or a tool that is more than just a glossary. This demand is even higher for lexicographers working on the English language, especially those working on English dictionaries of Economics. The English language has been widely accepted as the main language in the world economy. London and New York which are the investment capitals of the world are located in English speaking countries. Romaine (2009: 592) states that virtually all major corporations advertise their products in English. She also mentions that the official language of the European Central Bank is English, despite the facts that the bank is located in Frankfurt, only 10 percent of the bank's employees are British, and the UK has not joined the European Monetary Union.

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For lexicographers working on English dictionaries of economics or dictionaries for business people, recent advances in information and communication technology have created both opportunities and challenges. Business people always need to keep up with business news, and they often need a dictionary to help them understand the meanings of the words in business news. With the rapid development in business world, news in spoken form is becoming more common and new words are coined very fast. However, most of the current dictionaries only focus on the reception of written text and rarely include the new words promptly. Therefore, it is necessary to create a more reliable tool or a dictionary of economics that can cope with the needs of the business people who work in a global environment.

There are various opinions on what makes a dictionary reliable. Atkins and Rundell (2008: 45) states that "a reliable dictionary is one whose generalizations about word behaviour approximate closely to the ways in which people normally use (and understand) language when engaging in real communicative acts." Their criteria of a reliable dictionary seem to focus on how to explain a word. A reliable dictionary in this Internet era should be more than that. In order to define what a reliable dictionary is, we need to see the definition of 'reliable' in a dictionary. *Oxford Advanced Learner's Dictionary*, 8th edition (2010) defines 'reliable' as (1) that can be trusted to do something well; and (2) that is likely to be correct or true. A dictionary in the Internet era can be said to be able to do something well if it provides the solution fast enough and that the solution can be found as easy as possible. If we take those definitions into account and consider the needs of the users in the Internet era, we can define a reliable dictionary as one that can solve the users' lexicographical problems correctly, promptly, and conveniently.

The Internet era has also transformed the medium of lexicography from printed into electronic forms. In this case, we should expect a gigantic step that is more than just change of platform and that it will involve improvements in terms of quality which can be translated into quicker, more accurate and personalized satisfaction of the user needs (Tarp 2012: 253). This paper presents some principles that lexicographers need to consider in order to produce a dictionary that can solve the users' lexicographical problems correctly, promptly, and conveniently by taking into account the user situations and by using the appropriate technological tools.

2. Revisiting the Modern Theory of Lexicographical Functions

In order to make a dictionary that can satisfy the needs of the users, it is necessary to use the right and sound theory as the basis of the considerations to establish the principles for creating the dictionary. In this paper, the theory applied is the modern theory of lexicographical functions by Tarp (2008). This theory is transformative in nature as it does not only lay a solid theoretical foundation for reviews and criticism of dictionaries that do not perform their role optimally, but also strives to provide new and better solutions to lexicographical problems. That is why the third section of this paper provides a review and criticism of the current dictionaries of economics that do not perform their role optimally. After that, some principles and suggestions on new and better solutions to the lexicographical problems are presented in the fourth section of this paper.

In order to comprehend this theory better, it is necessary to state the definition of a lexicographical function. Tarp (2008: 81) defines a lexicographical function as "the satisfaction of the specific types of lexicographically relevant need that may arise in a specific type of potential user in a specific type of extra-lexicographical situation." There are at least three main points in the definition, i.e. relevant need, potential user, and extra-lexicographical situation. Referring to the lexicographical function, the three main points to consider in creating a dictionary of economics are as follows:

- The specific types of lexicographically relevant need: to understand the meaning of words, phrases, and clauses.
- The specific type of potential user: business people and economists, especially non-native speakers of English.

- The specific type of extra-lexicographical situation: reading business texts and listening to business news.

In general, we can consider that the main function of the dictionary of economics is text reception. In the past, the text reception function is usually related to the comprehension of written text or a situation where the user is reading a text. Given the recent development of information and technology, the text reception can also be connected with the comprehension of spoken text or a situation where the user is listening to an utterance. A number of studies have discussed the tools for understanding written text, but there are only few studies that have attended to the understanding of spoken text. In section four of this paper, several proposals are made on how to attend to the needs of the dictionary users to understand utterances or spoken text.

When creating a dictionary, user research is necessary. However, this does not always mean conducting a survey, such as using questionnaires or interviews. The user research can be conducted with introspection if the lexicographers know the users well and understand the needs of the users. By focusing on the needs of users, lexicographers can select electronic solutions that ensure retrieval of data that users can easily turn them into useful information (Nielsen & Fuertes-Olivera 2013: 335). Based on Kwary (2012), the needs of dictionary users can be classified into four, as follows:

- Fuzzy needs: The needs which are not clear and are difficult to define.
- Real needs: The needs for information to answer their lexicographical problems promptly and correctly.
- Ancillary needs: The additional needs which may emerge during dictionary consultation.
- Ultimate needs: The needs that occurs at the end of a process which includes dictionary consultation.

From the four types of user needs, lexicographer should not be trapped into dealing with the fuzzy needs. This is usually encountered by lexicographers who simply ask their users what dictionary their users need. In most cases, their users will only say that they need a good dictionary. This is difficult to define because what is good for one user group may not be good for another user group. Consequently, lexicographers need to focus on the other three types of needs: real needs, ancillary needs, and ultimate needs. A detailed discussion on how to cope with these three types of needs of the users of a dictionary of economics is presented in section four of this paper.

3. Current Online Dictionaries of Economics

Before formulating the principles for making a new dictionary of economics, it is necessary to review the current dictionaries in order to know their strengths and weaknesses. It is then possible to propose some suggestions to eliminate the weaknesses of the current dictionaries and to create a better dictionary in the future. When googling for dictionaries of economics, the top results which are most commonly shown are the following three dictionaries:

- *A Dictionary of Economics*, published by Oxford University Press
- *Essential Economics*, published by The Economist.
- *The New Palgrave Dictionary of Economics*, published by Palgrave Macmillan.

The reviews on each of those dictionaries are presented in the following sub-sections.

3.1. Review on *A Dictionary of Economics*

A Dictionary of Economics is published by Oxford University Press. The authors are John Black, Nigar Hashimzade, and Gareth Myles. This dictionary, although it is available online, does not have its own web address. Its website is under the website of oxford reference, so its web address is very long, i.e. http://www.oxfordreference.com/ view/10.1093/acref/9780199237043.001.0001/acref-9780199237043. Consequently, it is not particularly convenient to type in or to remember the dictionary website address. Since it is impossible to remember the exact website address, the users may need to start from the oxford reference website and search for the dictionary. Alternatively, the users can use google to search for the title of the dictionary in order to find the dictionary website. The front page of the dictionary website is shown in Figure 1.

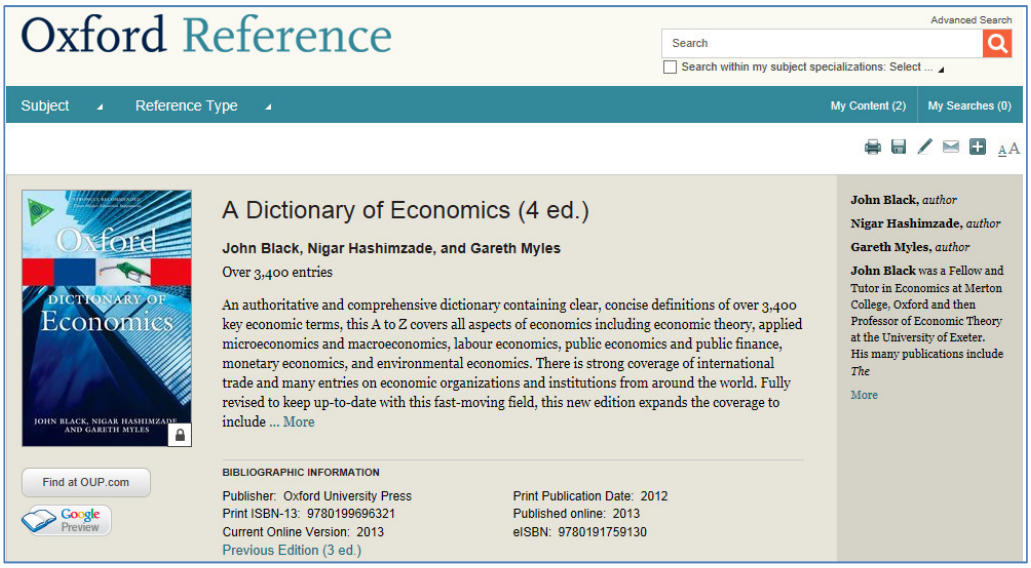

Figure 1. The Web Page of A Dictionary of Economics

In the website of *A Dictionary of Economics*, we can find the following promotional Information:

- An authoritative and comprehensive dictionary containing clear, concise definitions of over 3,400 key economic terms.
- This A to Z covers all aspects of economics including economic theory, applied microeconomics and macroeconomics, labour economics, public economics and public finance, monetary economics, and environmental economics.
- There is strong coverage of international trade and many entries on economic organizations and institutions from around the world.
- Fully revised to keep up-to-date with this fast-moving field, this new edition expands the coverage to include terms relevant to the financial crisis, making this dictionary the most up-to-date available.

The claims on the authoritative nature of the dictionary and the clear, concise definitions can be justified by the fact that it is written by experts in economics. However, the comprehensiveness of the dictionary is questionable. Nielsen (1994) has noted that a specialized dictionary usually contains 6,000-7,000 entries. Therefore, the number 3,400 is definitely far from being comprehensive. The other promotional information can also be questioned, but it is beyond the coverage of this paper. In this paper, we shall discuss the user situation when accessing this dictionary.

A user who wants to access an entry of this online dictionary will have the similar experience when he accesses the printed version of this dictionary. As shown in Figure 2, the web page of the dictionary does not provide a text-box to search for a word. The entries are listed in alphabetical order and the user has to click on the particular letter first, and then scroll down the web page to find the particular entry of the word or the term he is looking for. This is a type of dictionary that can be categorised into meagre Internet dictionaries, because it uses only very few technological features for the Internet versions of the dictionaries, and this results in high search related information costs (Kwary 2010: 274-277).

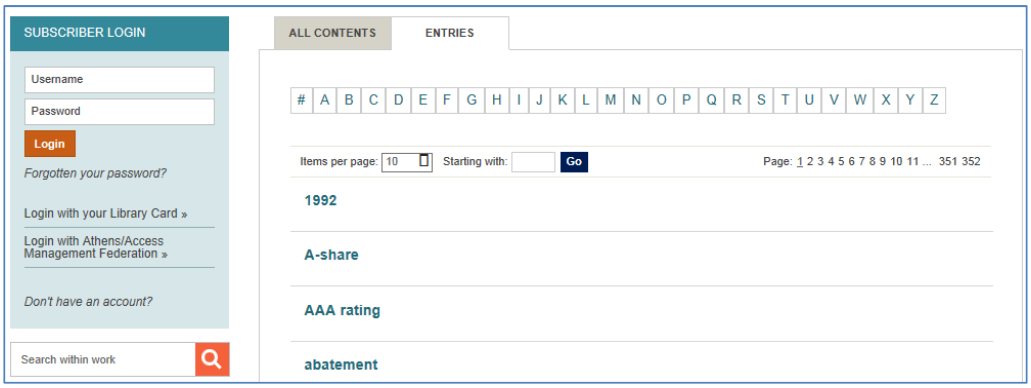

Figure 2. The Access to the Entries in A Dictionary of Economics

3.2. Review on *Essential Economics*

The *Essential Economics* is published by *The Economist* which is owned by the Financial Times, a subsidiary of Pearson. The main product of *The Economist* is a magazine. Therefore, the website of the dictionary is placed under the main website of the magazine, i.e. http://www.economist.com/economics-a-to-z. As the title suggests, the *Essential Economics* is promoted as a dictionary that provides the essence of economics, arranged alphabetically for easy reference and written with the clarity and authority for which The Economist is renowned. Its author is Matthew Bishop. The dictionary website also mentions that it substantive information and expansive A-Z. However, since it contains only several hundred entries, it is far from comprehensive. The front page of the dictionary is shown in Figure 3.

Figure 3. The Web Page of Essential of Economics

As we can see in Figure 3, this dictionary can also be categorized into meagre Internet dictionaries, because it uses only very few technological features for the Internet versions of the dictionaries, and this results in high search related information costs (Kwary 2010: 274-277). The users cannot simply type the term they are looking for, but they have to go through at least three steps when searching for a term. For example, when a user would like to know the meaning of the term 'interest rate', the steps he has to take to find the definitions are follows: (1) open the dictionary website; (2) click on the letter 'I'; and (3) click on the term 'interest rate' (see Figure 4). In addition, the user may also need to scroll down the page after Step (2), if the term is located at the bottom of the screen. Therefore, there are four steps to be taken in order to find an entry of a term. This inconvenient search route should be able to be solved easily by providing a text-box where the user only needs to type in the term and click enter in order to find the entry of the word.

Another help that can be added into a text-box to search for a term is a system called 'suggested entries' (Kwary 2012: 38). This system works like an incremental search which is integrated into the text-box. With this feature, the text-box will show some entries, as the user types a few letters. This system will help the users who are non-native speakers of English, and are unfamiliar with or find some difficulties in typing the exact spelling of an English term.

Figure 4. The Access to the Entries in A Dictionary of Economics

3.3. Review on *The New Palgrave Dictionary of Economics*

The New Palgrave Dictionary of Economics is published by Palgrave Macmillan. It was originally written by R. H. Inglis Palgrave with the title *Dictionary of Political Economy* (1894-1899). It was first revised by Henry Higgs in 1923. In its second revision in 1987, the title was changed into *The New Palgrave: A Dictionary of Economics*, and it was edited by John Eatwell, Murray Milgate and Peter Newman. The title was changed again in its 2008 publication into *The New Palgrave Dictionary of Economics*, edited by Steven N. Durlauf and Lawrence E. Blume.

This dictionary has a good website address that is both informative and easy to remember. Its website address is http://www.dictionaryofeconomics.com. This shows that in terms of the name selected for the website address, *The New Palgrave Dictionary of Economics* is more superior if compared with the previous two dictionaries. The front page of this dictionary is shown in Figure 5.

In the case of the use of technological features, this dictionary uses a lot more features than the previous ones. For the access to the dictionary entry, the user can either click on a letter or type in

the word in the text box. In its website, it promotes itself as a dynamic resource for economists, and it states the following promotional information:

- contains full text of 2008 print edition
- incorporates quarterly additions and updates
- offers excellent search and browse facilities, which make it possible to explore the content of the Dictionary with great speed and ease
- contains hyperlinked cross-references within articles, making it an indispensable tool for researchers and students
- features carefully selected and maintained links to related sites, sources of further information and bibliographical citations
- enables users to bookmark searches and articles, along with their own notes, in My Dictionary, or add links to articles on social bookmarking sites.

Figure 5. The Web Page of The New Palgrave Dictionary of Economics

Based on the promotional information, one of the strengths of this dictionary is the regular updates. New terms related to economics emerge over time, so it is necessary to have regular updates on the dictionary. If we see further into the website, we will learn that it is actually a dictionary for cognitive functions instead of for communicative functions, as it mostly provide encyclopaedic-like entries. In addition, the number of technological features used in this dictionary actually makes it impractical for users who need immediate answer to their communicative problems. For example, when a user wants to find the meaning of the term ‘interest rate’, she will not be presented with the definition directly. The dictionary will present the links related to the term searched for and a snapshot of each related entry, which is called an article (see Figure 6).

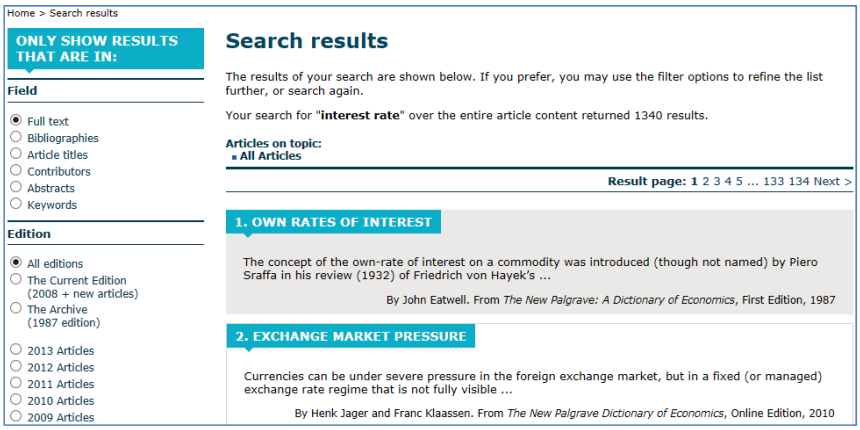

Figure 6. A Search Result in The New Palgrave Dictionary of Economics

As shown in Figure 6, the search for the term "**interest rate**" returned in 1,340 results. It is possible to conduct an advanced search where the user can specify the field, the edition, and the topics. However, the search results are still many, and it is unlikely that the users (who are not researchers) will be able to make a good selection on which result should she focus on. It is also unlikely that the users (who are business people) will want to click on the advanced search and the select the right entry or article when she only wants to know the meaning of the term. The most likely scenario is that the user will not continue using this dictionary, and will open another online dictionary. Therefore, this online dictionary can be categorised as extravagant Internet dictionaries, because the various technological features provided do not really help the users find what they are looking for in the shortest time and in the most comprehensible way (Kwary 2010: 277-282).

4. Lexicographical Information System

As we have seen in the review of the current online dictionaries of economics, there is still work to be done in order to improve the quality of future dictionaries of economics. We need to build on the strength that the current dictionaries have had, and eliminate the weaknesses. The strength of the current dictionaries is the fact that they provide reliable and correct information on the economics terms as they are written by experts in economics. However, providing the correct information alone is not adequate in satisfying the needs of the users. As mentioned in Section 1, a reliable dictionary is a dictionary that does not only solve the users' lexicographical problems correctly, but also a dictionary that can solve the problems promptly and conveniently. Therefore, in this Internet era, lexicography can be viewed as a part of information science, where both sides, lexicography and information science, can learn from each other to contribute to the production of a better dictionary (Tarp 2012: 256).

In this Internet era, a dictionary needs to evolve into a Lexicographical Information System (LIS). In this paper, an LIS is defined as an organized group of components that provides information to solve lexicographical problems. In an LIS, the dictionary component is integrated with other components to help satisfy the needs of the users. There are various components that can be integrated into a dictionary. In this paper, the discussion focuses on the following four components: a **voice recognition function**, a **tooltip**, an **auto-summarize function**, and a **definition-finder**.

In order to see how those components solve lexicographical problems promptly and conveniently, it is necessary to provide an example of a user situation. Since the primary users of a dictionary of economics are business people or those who need to keep up with the development in economics, the possible user situations are reading and listening to business news. For non-English speaking people, listening comprehension is more difficult than reading comprehension. The

use of dictionaries is often related to reading comprehension. However, with the recent advanced in information technology, dictionaries should also be able to assist in listening comprehension. Nowadays, it is very common for business people and economists to have hand-held devices (e.g. iPads and tablets) that are connected to the Internet and the users can access spoken business news. Consequently, a possible user situation is that a user is watching business news, for example from BBC. If we refer back to the types of needs mentioned in Section 2, the needs of this user can be categorized as follows:

- Real needs: The needs to understand the meaning of some words.
- Ancillary needs: The needs to check what the words that the speaker in a business news is actually saying. In this case, the user may also have a problem in deciphering what the speaker in the business news is saying, so he needs a tool to help him understand what the speaker is saying.
- Ultimate needs: The needs to understand the whole text, or the main points of the news that the user is listening to.

In order to meet the real needs of the user, the dictionary needs to have the words that the user is looking for and provide the correct definition that is understandable to the user. This means that the dictionary should contain a lot of headwords and the definitions are written in the language that the user easily understands. In some cases, the definitions can be in the form of equivalents in the first language of the users.

The ancillary needs stated above can be considered beyond the scope of a dictionary in its traditional sense. However, if we consider that the situation is still related to text reception, and there is a technological tool that can help to meet these ancillary needs, we should integrate the tool into one of the components of the dictionary. Since we know that some users have problems in deciphering what the speaker in the business news is saying, we need to provide a tool that can turn a spoken text into a written text. This tool is usually called a voice recognition tool or a speech-to-text tool. One of the examples of such a tool is the Dragon Speech Recognition Software. This kind of software can be placed as one of the components of the dictionary and can be called a speech recognition function. In the proposed dictionary (see Figure 7), the speech recognition function can be accessed by pressing the menu called 'News Script'.

Figure 7. The Layout of the Dictionary with the Speech Recognition Function

Figure 7 shows a situation when a user is using the proposed dictionary while listening to a business news from BBC. Since he is not a native speaker of English, he might have a problem in deciphering what words the speaker is saying, let alone understanding the meaning of the words. If he does not use this proposed dictionary, he probably need to record the news and play it several times until he understands the words that the speaker is saying. If he uses the proposed dictionary, he can click on the menu called 'News Script' to turn the talk into text. Therefore, it will be easier for this user to understand what the speaker is saying. The user can also review the text after listening to the news.

The next component to be integrated in the dictionary is a tooltip. The concept of a tooltip for an online dictionary is discussed in Kwary (2012). The tooltip is a small textbox that pops up when a user clicks on a particular word. The textbox contains the equivalent of the word. The dictionary should be set for the native language of the user, so when the user clicks on a particular word, the translation equivalent of the word in his native language will pop up. For example, if the user is an Indonesian and he clicks on the word 'collateral', the Indonesian equivalent '*agunan*' will be shown next to the word 'collateral' (see Figure 8).

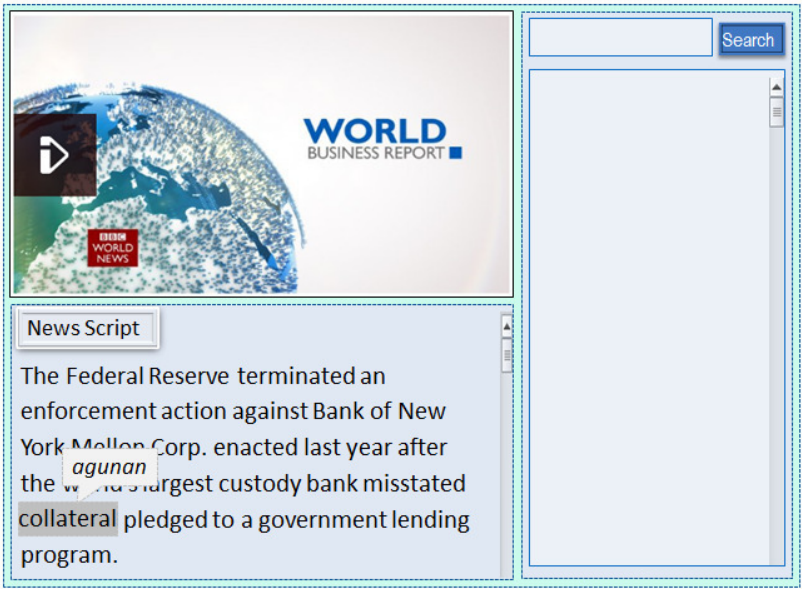

Figure 8. A Tooltip Component in the Dictionary

The tooltip enables the users to solve their text reception problem, i.e. understanding the meaning of a word, promptly and conveniently. The users can simply click on a particular word and will be automatically presented with the equivalent of the word. They do not need to open a dictionary, type the word, and see the definition, which altogether take at least three steps. The tooltip can be accessed with a single step, i.e. a single click. After looking at the equivalent of the word, the user can click on the word or the textbox to hide the tooltip. Since not all English words have their translation equivalents in another language, the tooltip should be integrated with the main dictionary, which can be a monolingual learner's dictionary. Consequently, when the translation equivalent cannot be found, the dictionary will not show the tooltip or the textbox, instead the dictionary will show the full entry of the particular word.

The two components explained above, i.e. a voice recognition function and a tooltip, help to satisfy the real needs and the ancillary needs of the users. To make an even more prominent dictionary, we should try to attend to the ultimate needs of the users. In this case, the ultimate need of a business person who is listening to a business news is to understand the news as a whole. Some business news can be quite long and business people may not have the time to listen or to read the lengthy business news. In the research conducted by Krause and Braida (2002), a television news

reader can read between 169-307 words per minute. Therefore, if the length of the news is five minutes, the number of words can reach up to 1,500 words. A discussion on a business topic can be a lot longer and contain a lot more words.

For a text that is too long, it is necessary to provide a tool that the users or the business persons can use to satisfy their ultimate need, that is to understand the main points of the news. In this case, the dictionary can provide the component called the auto-summarize function. This function can be found in the Microsoft Office Word from 2007, called AutoSummarize. In the Microsoft Office Word, the AutoSummarize determines the key points in a document, and the user can select whether to highlight key points in the document, insert a summary at the top of the document, create a new document and put the summary there, or hide everything but the summary. With the similar Auto-Summarize function included in the proposed dictionary, the users can simply click on the menu called Auto-Summarize and the users will be presented with the main points of the business news. In the dictionary, the Auto-Summarize menu can be placed on the right side of the News Script menu (see Figure 9).

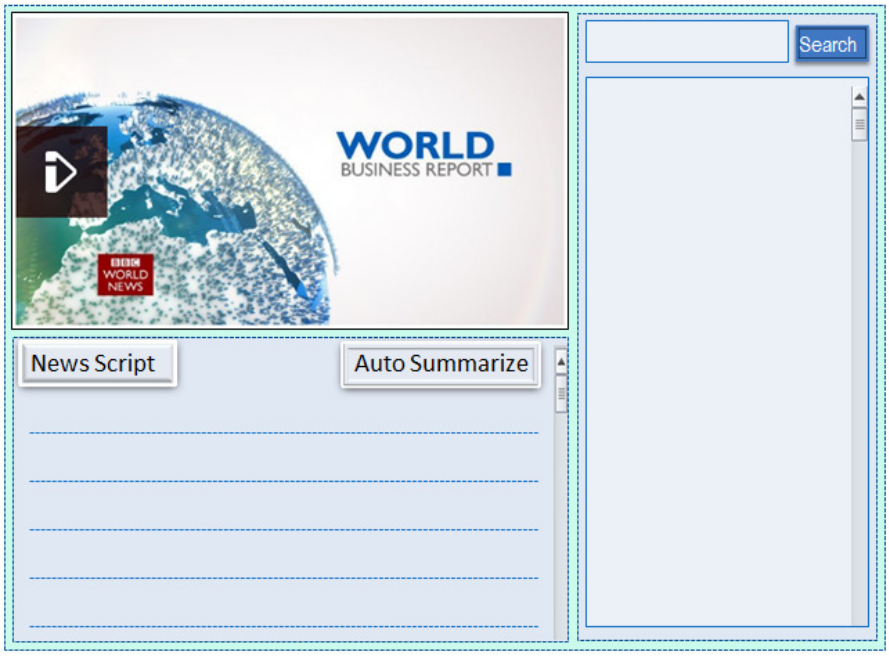

Figure 9. The Placement of the Auto Summarize Function in the Dictionary

The discussion above has shown how the addition of the three components, i.e. a voice recognition function, a tooltip, and an auto-summarize function can help to meet the real, ancillary, and ultimate needs of the users promptly and conveniently. The next component to be integrated into the dictionary is the definition-finder. As mentioned previously, a text reception dictionary needs to include a big number of entries, so that the users can always find the word or the term they are looking for. However, given the fast changes in the English language vocabulary, there are always new words emerge over time, and the lexicographers may not be able to always include those new words. Therefore, we need to have the component called a definition finder to be included in the dictionary.

The definition-finder works like a google search and a concordance software, with additional functions. A google search usually presents the results from all websites, whereas the definition-finder only presents results from dictionary websites (further explanation is given in Figure 10). If the word cannot be found in all online dictionary websites, the search will be directed to websites that relate the word with some definitions. This means that the definition-finder directly looks for the phrase ‘node means’ and ‘node is’ (i.e. the node is the searched word), although the user only

clicks on the word (called the node in the search program). The search of the node is also related with the word collocates associated with definitions, i.e. define, classify, etc. (further explanation is given in Figure 11). The results of the search are presented like the KWIC (key word in context) results of concordance software commonly used in corpus linguistics. However, there are several differences between the results from the definition-finder and the results from concordance software. The differences are presented in Table 1.

Concordance Software with a Corpus	**The Definition-Finder in the Dictionary**
The concordance lines are presented by the number of items (or words) in the left and the right of the Node.	The concordance lines present the full sentences where the term is found.
The corpus was usually created by the linguists based on 'old' data. Some corpora can be based on current data, but not related directly to definitions.	The corpus is taken from other free dictionary websites and other texts related directly to definitions.
The concordance lines, e.g. additional examples are available for all headwords.	The concordance lines are only for the words which have not been included in the dictionary.

Table 1. The Comparison between Concordance Software and the Definition-Finder

An example of a search for a word that is not in the proposed dictionary is shown in Figure 10. In this case, the user would like to know the meaning of the word 'omnishamble'. When the user clicks on the word 'omnishamble', he is not presented with a tooltip nor a dictionary entry because the dictionary does not have the word's equivalent nor the entry. The dictionary then put the word in a definition-finder automatically and finds the results from other online dictionary websites that can be accessed for free. In Figure 10, the results are found in the websites of Oxford Dictionaries and Wikipedia. This means that although the dictionary does not have an entry of the word, the dictionary can help the user to look for the entry in other dictionaries. Therefore, the user does not need to open another dictionary or to open the google website to search for the meaning of the word. All are integrated in the proposed dictionary.

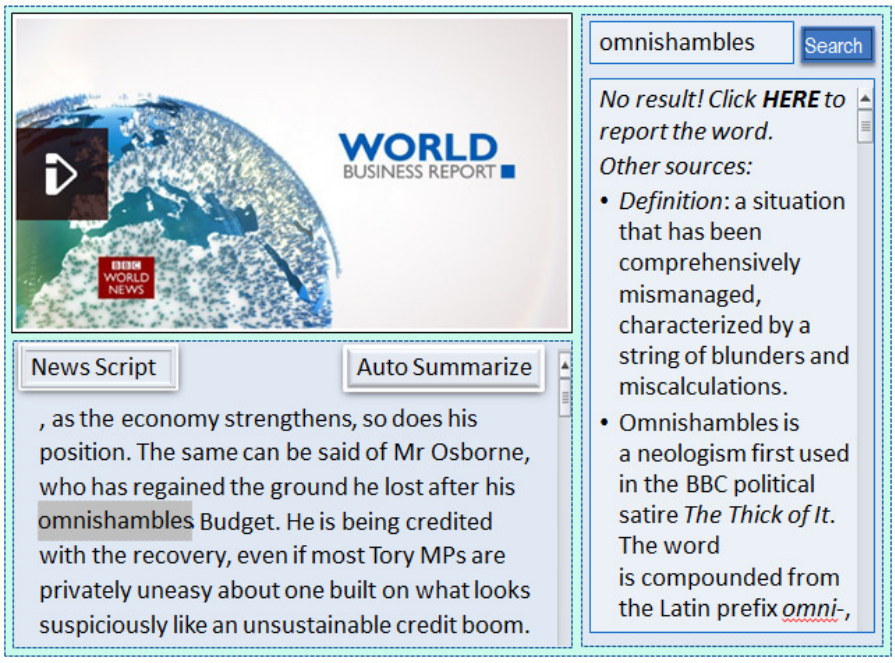

Figure 10. The Definition-Finder Directing to Other Dictionaries

In Figure 11, the situation is when the user wants to find the meaning of the term ‘credit boom’ but this term is not available in the proposed dictionary. Consequently, the definition-finder automatically searches for the term in other online dictionaries. Let us assume that this term is not available in other online dictionaries. The next step that the definition-finder does is to look for the phrase ‘credit boom means’, ‘credit boom is’, as well as the collocates between ‘credit boom’ and the word families of the words related to definitions, e.g. ‘define’, ‘classify’, etc. The results shown in Figure 11 are a sentence that contains the term ‘credit boom’ and ‘classify’, and a sentence that contains the term ‘credit boom’ and ‘define’. Such sentences do not only show the use of the term ‘credit boom’ in context, but also help the user understand the meaning of the term because they are not just random sentences. They are sentences that are related to definitions.

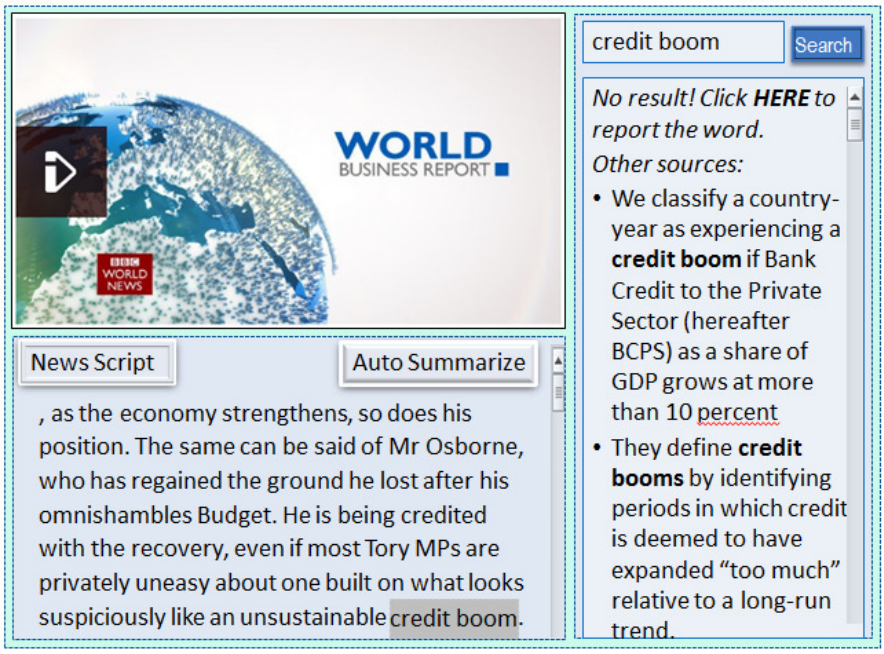

Figure 11. The Definition-Finder Directing to Definitions in Context

The concept of the definition-finder explained in this paper can make the dictionary becomes a future-proof dictionary. Nielsen (2013: 360) mentions two main features of a future-proof dictionary, they are the one that give users the opportunity to access structured data with targeted searches and the one that presents the search results in structured ways that tell users exactly what they need to know. As explained above, the definition-finder gives the users the opportunity to access all data in the web, but with targeted searches and present the results in structured ways that the users only see the definitions or the sentences that they need to know in order to understand the meaning of a word or a term.

Since the word and the term exemplified in Figures 10 and 11 are not in the proposed dictionary, it is necessary to provide a method that the user can use conveniently to report it to the lexicographers. In this case, as shown in Figures 10 and 11, there is a link that the user can click if the user wants to report the word or the term. This will help the lexicographers decide what word or term should be added into the dictionary in the next update of the dictionary.

5. Conclusion

As we have seen in the previous sections, there are still a lot of things that we can and should do in order to improve the quality of the future dictionaries of economics. A dictionary of economics needs to evolve from a glossary to a lexicographical information system (LIS). As an LIS, the

dictionary is integrated with various components to better satisfy the needs of the users. The discussion in this paper focuses on a situation where a non-native speaker of English is listening to an English business text, and has some text reception problems. A hypothetical dictionary called the proposed dictionary is used to show how a future dictionary of economics should look like. In the proposed dictionary, which uses the concept of an LIS, there are four components to be integrated with the dictionary, they are the voice recognition function, the tooltip, the auto-summarize function, and the definition-finder. The voice recognition function helps the users to convert the talk into a written text to know what the speaker is actually saying. The tooltip enables quick access to the equivalent and the definition of the word that the user wants to know its meaning. The auto-summarize function helps the users to know the main points of a lengthy business news, by presenting the summary of the news. Finally, the definition-finder helps the users to always find the result of every word or term they look for, by integrating the dictionary with other online dictionaries and other websites. With a dictionary that takes the concept of an LIS, the users will be able to find the correct solutions to their lexicographical problems promptly and conveniently.

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