Text Analytics, Automation, Knowledge Management & Intelligent Search

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Abstract

Text analytics is the fundamental part of data analysis using known and unknown information that are extracted from big data sets. This is similar to data mining. Unknown data is extracted to create knowledge management and train AI systems. With this information, more menial tasks can be performed by expert systems rather than people, changing automatization in the future. Having the capability of an advanced AI system such as intelligent search optimizes search processes in extreme ways, potentially changing the trajectory of technology and the future.

Introduction and Background

Text Analytics

Text analytics is a subdivision of the Natural Language Processing (NLP) filed in computational linguistics. Also, known as intelligent Text Analysis, Text Data Mining or Knowledge-Discovery in text (Moreno, 2016). Thus, sharing a similar role as big data since they both deal with unstructured text. Text analytics is an extracting process done with non-trivial information and knowledge. Which helps discover new and previously unknown information by the extracting process.
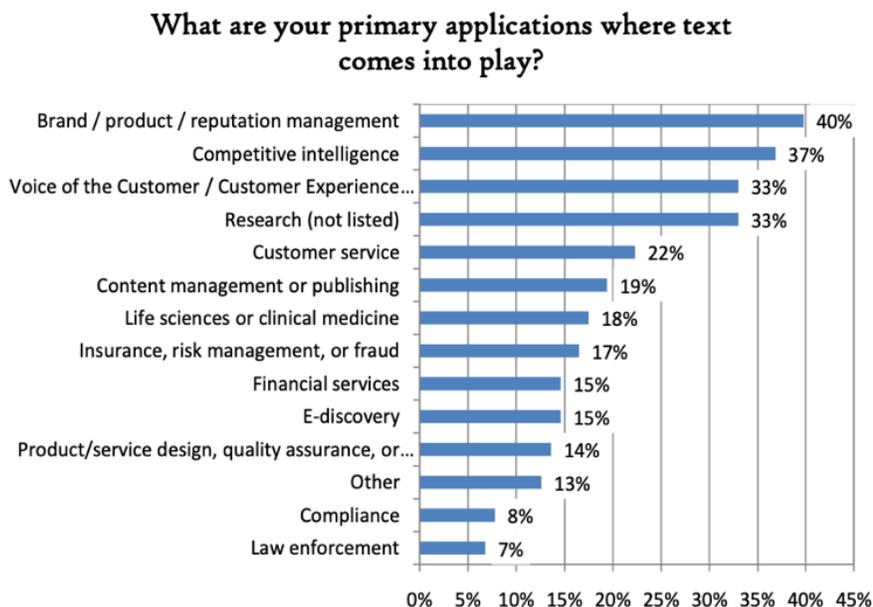

Figure 1: Types of applications fields (Grimes, 2009)

Using textual patterns, linguistic-based and machine learning-based approaches from non-structured sources to complete its extraction. Some patterns used for searching are sentence segmentation, tokenization, part-of-speech tagging, shallow syntactic parsing/chunking, named

entity recognition, and dependency analysis (Moreno, 2016). The extracting process utilizes other software programs such as information extraction, Topic tracking and detection, summarization, categorization or classification, clustering, concept linkage, information visualization, question and answering, and deep learning. The growing use has spread to different industries and commercial fields such as finance, healthcare and supply chains.

Information Extraction uses key phrases along with relationships in the text. With predefined sequences, pattern matching and typical based on common expressions. Topic tracking and detection uses keywords to identity large amount of data such as articles, online text documents, and search engines as seen in Figure 2.

What textual information are you analyzing or do you plan to analyze?

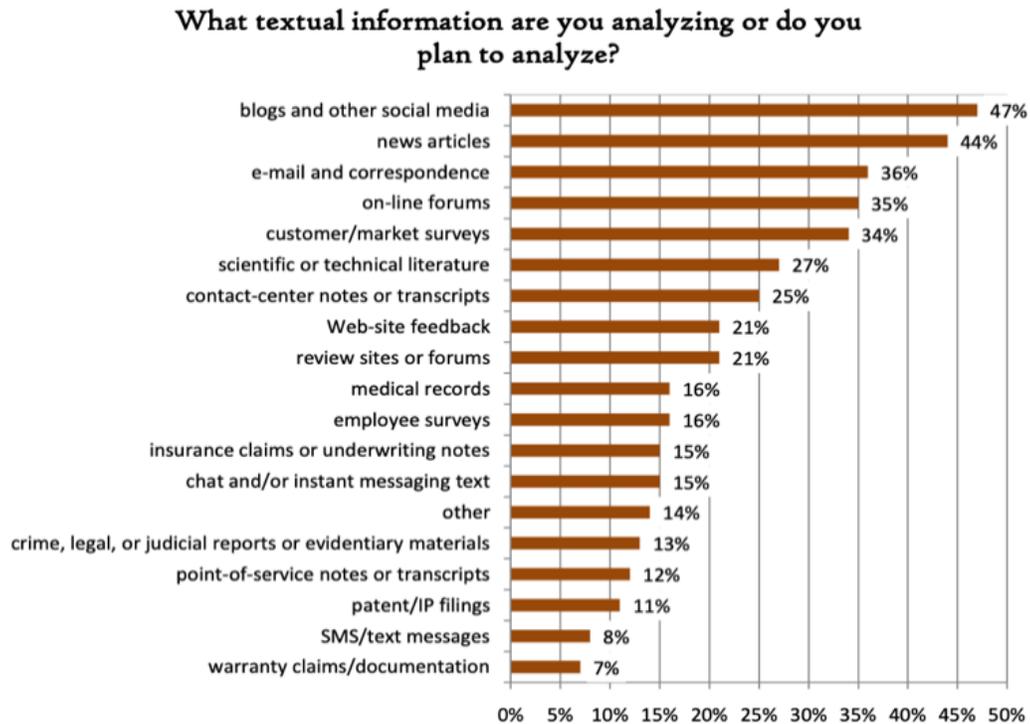| Category	Percentage
blogs and other social media	47%
news articles	44%
e-mail and correspondence	36%
on-line forums	35%
customer/market surveys	34%
scientific or technical literature	27%
contact-center notes or transcripts	25%
Web-site feedback	21%
review sites or forums	21%
medical records	16%
employee surveys	16%
insurance claims or underwriting notes	15%
chat and/or instant messaging text	15%
other	14%
crime, legal, or judicial reports or evidentiary materials	13%
point-of-service notes or transcripts	12%
patent/IP filings	11%
SMS/text messages	8%
warranty claims/documentation	7%

Figure 2: Information to be analyzed (Grimes, 2009)

This helps predict documents using top tracking. Summarization is use by sentences extraction from a document as well as headings and subtopics to help identify key points. Categorization or classifications uses predefined themes relaying on relationships or topics as thematic graphs using similarity. Clustering is similar to that of categorization but without predefined topics. Concept linkage tools find related documents that share commonly shared concepts between two different objects. Information visualization maps out a hierarchy to narrow down a broad range. Question and answering uses queries to find the best answer to a question. Deep learning uses neural networks in two layers that processes text.

Automation

Any repeatable task that a human is needed for in any setting can at some point, with enough innovation, be automated. These labor-saving technologies allow tasks to be completed with

minimal human interaction (Grace, 2018). Automation can be found in all areas from household appliances to huge assembly lines in factories.

In a report done by McKinsey & Company in 2016, different industries were examined for the feasibility of them to be automated. Figure 3 shows a breakdown of different occupations by sectors. Each sector then shows the amount of time spent doing the activity and the ability to automate the different factors of the job. The size of the circle represents the amount of time spent doing that type of work in the occupation, and the color representing how hard that work would be to automate. Red being nearly impossible, with blue being easily feasible (Chui, Manyika, & Miremadi, 2016).
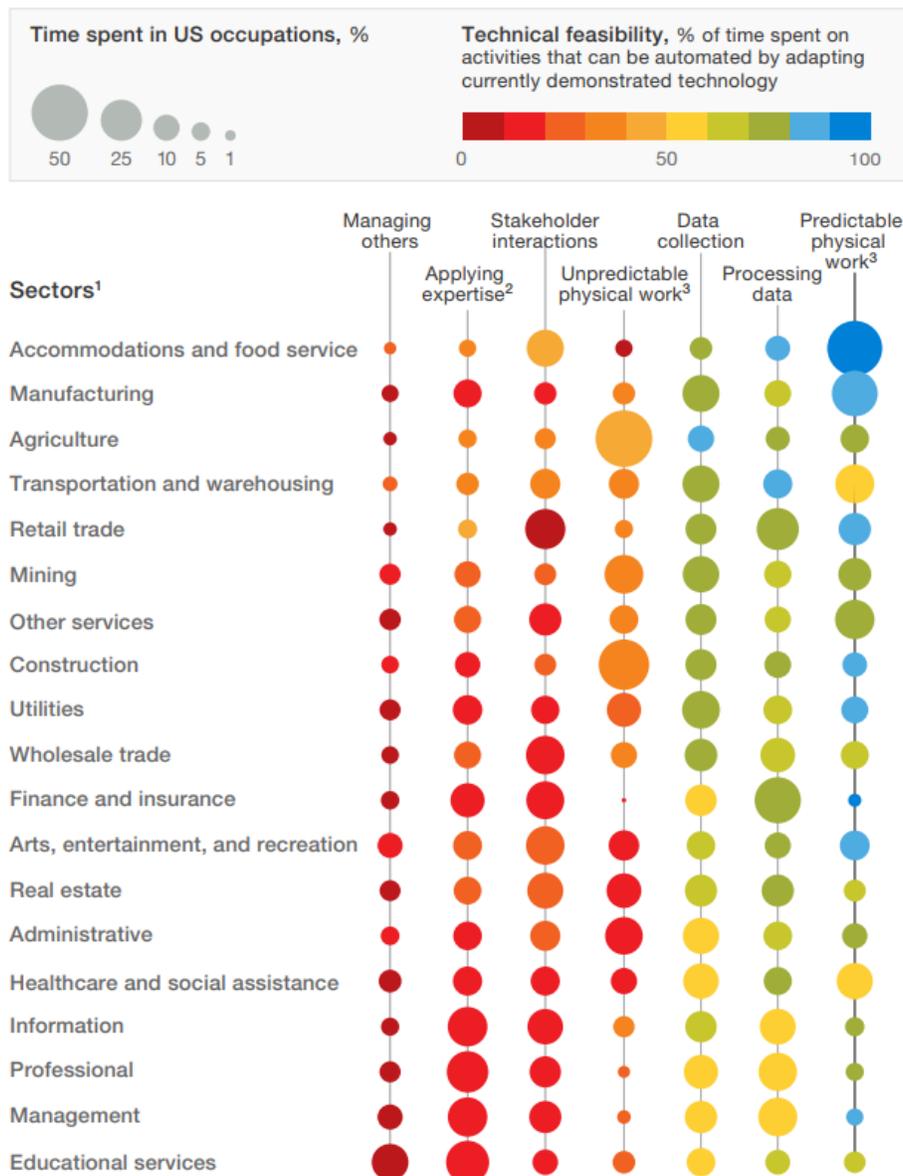

Figure 3: Technical feasibility by activity type for many industry sectors (Chui, Manyika, & Miremadi, 2016)

Automation in the households has become commonplace. Simple controllers that monitor temperature are used by a water heater to maintain hot water, a thermostat to control air conditioning, and an oven to maintain the desired temperature. While many other tasks are semi-automated requiring some human interaction such as dishwashers, washers, and dryers. Improvements in technology have allowed the Roomba to advance from a simple wall bumping algorithm, to a sophisticated robot that utilizes artificial intelligence to sense and learn the world around it.

Artificial intelligence can be used for more complex tasks such as a self-driving car. Several different sensors and optics need to be utilized for the automation of something as complex as driving a car. The artificial intelligence will utilize the inputs from all the sensors to decide in real time what to do. These decisions can allow the car to proceed forward, or to slow down to avoid something ahead. Since a program can only be coded for what the coder predicts, artificial intelligence is used to make predictions for the conditions not planned for.

Knowledge Management

AI allows machines to gain knowledge on how to perform tasks. The machines use that knowledge to perform tasks that humans do. Knowledge Management (KM) is used to make it efficient for the user for an organization and saves the knowledge used for that specific company (Hietala, 2019). This is used to benefit the productivity, minimize risks, and make faster decisions to help a business become better. KM engages in four practices to provide effective knowledge management process which are discovery, capture, process, and maintaining knowledge (Greene, 2020).

Discovery is an understanding of where the knowledge is being sourced to in the organization. It is used to know where the important knowledge is kept, and how to learn from the knowledge. In addition to figuring out where the knowledge can be lost in the system. Capturing allows the organization to contain the amount of knowledge in their database. It must be stored and organized. To create an organizational structure that can be mapped out, the knowledge needs to be categorized properly to be accessed easily. Process makes sure the knowledge is organized and assessed properly. That will help have a structure to keep building in the information for the organization. Sharing enables easy access for the whole organization to obtain easily. This will help maintain the knowledge within the company and allow the system to be used efficiently by the employees in the company.

KM and AI is used to help machines learn. Machine learning is used to help improve the decision-making process for the humans. AI helps machines to process, acquire, and use the knowledge to provide a better system for the employees to use (Rhem, 2017).
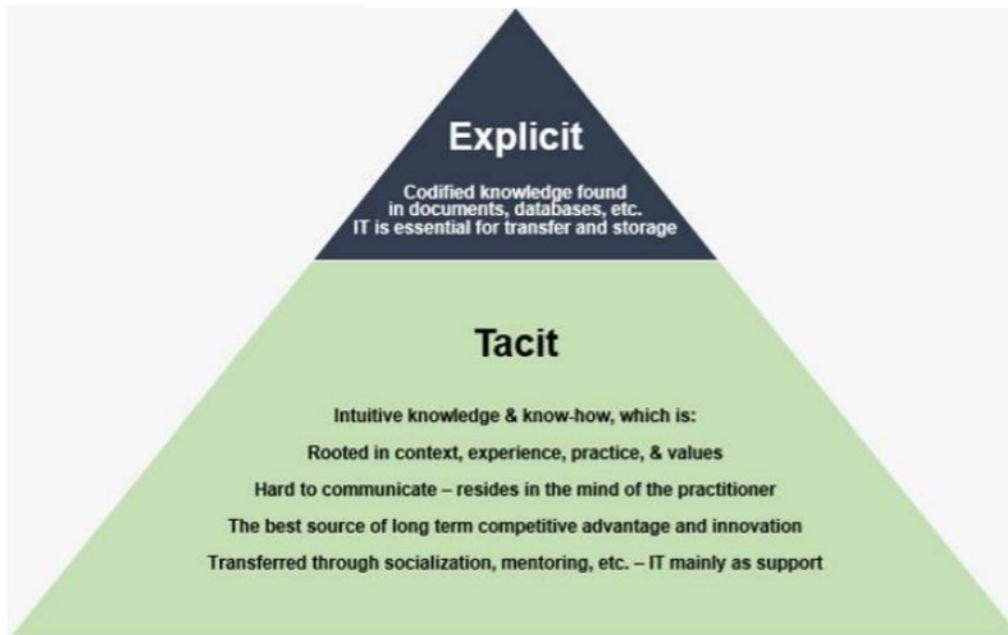
Different Types of Knowledge Management

Figure 4: Different Types of Knowledge Management (Hajric, 2018)

There are two different types of KM: Explicit Knowledge and Tacit Knowledge (Hajric, 2018). Figure 4 displays explicit knowledge being on the top part of the pyramid and tacit knowledge being on the bottom part of the pyramid.

Explicit Knowledge

Explicit knowledge is knowledge that can be documented. It is useful for database, notes, documents, etc. It is helpful because it is documented information that can be written down. It can be easily codified. It is easy to share, modify, and copy to use that knowledge. It is easy to organize and categorize. That allows there to be transfers when needed.

Tacit Knowledge

Tacit Knowledge is knowledge that is personal, or experience based. It cannot be easily codified. It is hard to document and measure the knowledge, but it is the most valuable source of knowledge. It is difficult to share, modify, and copy to use that knowledge.

Some examples of tacit knowledge are language speaking, sales, body language, intuition, etc. Language speaking is learning vocabulary and grammar of a different language. Using that knowledge to increase experience speaking a different language. Sales is a skill that is learned by a salesperson to help the business increase the money flow for that business. Body language is a skill that is important when talking to others. It is learned as you grow older to make communication easier. Intuition is a skill that allows the person to understand knowledge without logic. It makes decision making easier and learned as you make mistakes.

Intelligent Search

Knowledge is power; that is the lifelong adage that has been passed down across generations of people over centuries of time. Access to information is a key determinant for advancement in various works of life, from business and learning to sports and medicine. As a result, it is no surprise that positioning in the Search Engine market is as important as it is.

The World Wide Web, accessed via the internet, has become the premiere source for searchable information. Data stored via relational and non-relational databases has been curated in formats that make information retrievable by the mere click of a button on a search engine website.

However, the presentation of information that is sought is arguably as important as the retrievability of the information itself. Individuals seeking information on the internet are looking for search engine websites to interpret passed data in the way that it was originally intended and answer accordingly.

This growing need for advanced artificial intelligence and machine learning brought with it the need to develop search algorithms that found ways to decipher textual data and provide solutions to the perceived problem. "The subject invention [Intelligent Search] relates generally to computer systems, and more particularly, relates to systems and methods that employ machine learning techniques to rank and order search results from multiple search sources in order to provide a blended return of the results in terms of relevance to a search query." (Liu, Ratnaparkhi, Yao, & Katariya, 2006)

Each search engine website uses different algorithms to determine ranking for search results. Some of the more popular methods include looking for the entered search phrase in the title tag of an HTML page, noting frequency of occurrence and identifying location of search term on a page (appearance near the top of a page, generally in the headline section, ranks higher than appearances towards the lower parts). (Liu, Ratnaparkhi, Yao, & Katariya, 2006)

The ultimate goal for the creation of intelligent search is to provide the most relevant information to a user in the order that most directly relates to the phrase being searched for. One of the key attributes of an intelligent search algorithm is the ability to use previously found data to make decisions on best course for a solution, i.e. using heuristics as an aid.

Need

One of the most important parts of being a software developer is having the ability to retrieve the necessary information that is needed to solve a problem. As advancements are made within the development field, more information is constantly sought out. A quick search on the Stack Overflow website is par for the course on a normal workday. Remaining on the bleeding edge of the vocation means that this process must be never-ending.

Diagnosing problems on the operating system, for example, requires the use of utilities such as "grep" to identify patterns and relevant information in log files for issue resolution and triage (Liu & Lethbridge, 2001). This need expands way beyond just software developers. Everyday people utilize search engines such as Google to find information that they need.
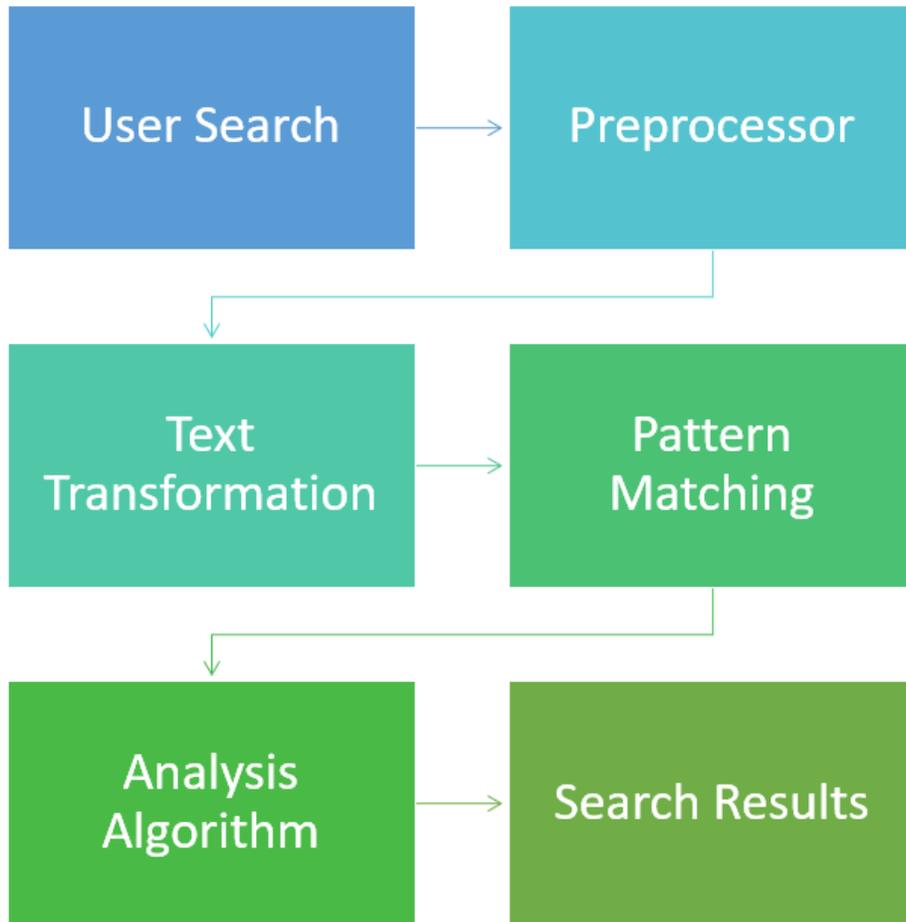
Figure 5: Intelligent Search Process

Because so much variation exists within the expression and definition of terms, identifying the exact result being sought out is not always straightforward. Regular expressions and other types of query expansions have been created to perform transformations to a string. One such type of transformation is the use of dictionaries to find acronyms, antonyms, and the like. However, normal query expansion methods are not usually a one-stop solution in retrieving information in more complex utilities such as source code exploration systems.

Intelligent search solutions have been devised to streamline this process and automate string transformation to find more relevant results.

Method

There are three main processes involved in a normal information retrieval model: preprocessing, retrieval, and evaluation.

The pre-processor involves the use of automatic text operation methods such as "stopword" removal and stemming to ready information for retrieval. This leads to a word collection that is the putative logical view of the document. The logical view can include manually assigned keywords by authors. (Liu & Lethbridge, 2001)

Prior to search results being presented, search candidates are created using various algorithms. The query is then performed and a decision on order display to user is made.

Issues

Text Analytics

One of the main issues to text analytics is the usage of big data and access to it. In order for text analytics to work there has to be reliable data. Yet, there is no correct way to measure what is considered big data or small data. If the amount of data is larger than the capacity of the user's storage than you run into hardware issues. Meaning that if the data is using the full capacity than there is no room to train the software to do its job properly. Which leads to the availability to train systems to have a reliable result.

The other issue is the ability to access the data. Much of the data that is collect is stored in private database/servers that are not accessible to the public. So, if this information does not allow public access this limits the success rate of the software potential. The consequence is that replication of analysis is almost impossible, since the supporting materials and the underlying technology are not publicly available (Moreno, 2016).

Big Data

Big data has become a major part in the world of artificial intelligence. As it's used for many different type's methods of data collection. Though it has come upon a few conflicts within itself. One major issue being the exact method of determining what is considered small data and big data. This all comes down to the simple matter of how data is stored.

Data can become overwhelming and exhaust our means of storage. Requiring a vast number of data centers to help store the data. With that being said, how can there be a measurement if the technology limits the amount of data that can be stored on a single place. With also lead using cloud computing to share data worldwide.

Bringing us to the issue of how you can access the data and how it makes it harder for the use of text analytics. In order to have text analytics to be successful it needs to be able to access as much data to create linkages with all the data possible. Which becomes an issue when there is data that is being protected or data that is denied to certain users.

Automation and Knowledge Management

With the data that is extract using text analytics it creates new uses for it. Whether it's used to help make future predictions, business decisions, or software training. The data needs to have some sort of organization. This is where knowledge management kicks to ensure that the correct data is used. Although like big data sometimes this data is withheld and protected which then limits its use. When it should be used to optimize to its full potential to help improve the life and uses for humans. Making knowledge management have its own issues within as it can both limit and optimize its use. Determine how the data is allocated can be an issue if the data gets split into different locations. Causing there do be corruption in data that is then unusable from the original extraction done by the text analytics.

Data is what helps improve everything in the world in all aspects. So when all this data gets put to use there are not only benefits there are also downfalls. Which is what we know as automation, then leading cause of newer technology. Though this is a great thing as a result from gaining data this also effects everyday normal jobs. The data that is collected can point out everyday things that can be replaced by machines. Which in the long run threatens the work force as it pushes out labor for machinery. Yet this isn't all negative feedback, this also creates new jobs as all machinery needs to be serviced. Using data that is collected and extracted. This helps improve these newer technologies with future crash reports and data caches.

Automation

As more and more jobs are automated the question arises as to where the money from the machines should go. Some of these lost jobs will be replaced via structural unemployment. More complex jobs will emerge to compliment or innovate the machines that replaced them (Grace, 2018).

Approximately 1% of Americans are truck drivers who haul freight around the states. Self-driving trucks would eliminate the need for the truck drivers, eliminating over 3.5 million jobs. Since the technology will be expensive, the transition would be slow and gradual. Allowing for new roles to develop to replace the lost jobs.

Although structural unemployment has been keeping pace with technology, at some point the amount of jobs lost to automation will be to great. Universal basic incomes are a possible solution to a dwindling job market. As more machines take over jobs, a new tax mechanic could be made that taxes good made by automation at a higher rate than products made with human interaction. These extra taxes would provide a basic income to cover housing and food (Witte, 2019).

Artificial Intelligence

Robotics is a field that has been growing rabidly in the ability of the machines they build. While these machines have been advancing so has the software that runs them.

Traditionally these machines have been programed to complete a single task repeatedly, in a factory setting where items are uniform and always located in the same spot. This method of programing works well for mundane tasks such as folding a box for packing. Randomness is the main factor that held back automation in more fields.

Artificial intelligence is a method of programing that allows the software to learn from experience, called machine learning. Conventionally a robot arm would be programed to grab a bolt and assemble something. With Artificial Intelligence the arm is told how to move, but not where to move. Instead the decisions on where to move are determined by a set of parameters that are calculated through trial and error. Programs can be trained on simulations or data gathered for millions of iterations to achieve the best method of achieving a goal state.

The capabilities of Artificial Intelligence will allow automation to expand to fields previously thought of as a fantasy. Some of the fields in current times are the ability for cars to drive themselves, and project management software. This software has the capability to complexly automate the project management for a business. The user inputs the tasks needed for the project, delegates whether the task can be automated or needs a human touch, finds free lancing applicants to complete the human tasks, and monitors the progress until completion. According to McKinsey & Company in 2016 this type of task would be very unfeasible (Chui, Manyika, & Miremadi, 2016).
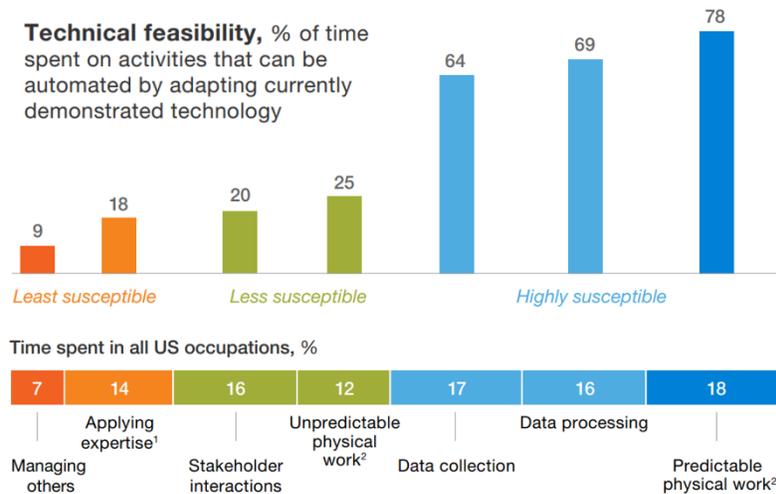

Figure 6: Susceptibly of occupations are to automation (Chui, Manyika, & Miremadi, 2016)

Artificial intelligence is so powerful due to its ability to learn. The tasks that require a human touch once completed will be saved. These completed tasks will become new data values for the machine to train on and learn for the future. After completing hundreds of projects and having thousands of data values for human task, the Artificial Intelligence could learn to complete all tasks.

Structural Unemployment

The basic definition of structural unemployment is persistent, long-term unemployment. This form of unemployment can be cause by a plethora of factors. The main form comes

from big shocks in the market that change the amount of locations and job type a company needs. These shocks come in the way of technological advancements. These examples can be the oil crisis in 1970, trade routes being opened with china, and the rise of the internet.

Advancements in automation is causing in increase in unemployment. Low skilled workers are being replaced by machines that can accomplish the same task, many times with greater efficiency. Ideally new jobs would be created to replace the jobs being lost. Although since the 1970's the amount of job creation in the United States has decreased, with the first decade of the 21st century in the United States having no increase in the total amount of jobs. This becomes a problem when you consider the United States population rises approximately 1.8 million every year.

During the years of 1998 and 2013 in the United States there were only 194 billion hours worked in each year. Although there were the same number of hours were worked, throughout the 15-year period the population increased by 40 million people. This means the jobs that are created are nullified by the jobs lost, without a net increase. Automation has allowed the total jobs to stay at standstill as without adding more jobs, production has gone up 42% with machines.

Minimum Basic Income

A common topic brought up to combat the advancements in automation is for governments to issue a Universal Basic Income. This term of a Universal Basic Income has many forms and meanings, which can range from concepts like Welfare to providing everyone with a middleclass salary. The concept with the most approval is a Minimum Basic Income, MBI.

The concept of a MBI is for a government to provide to its citizens a tax-free amount of money. This amount would be enough to put each citizen above the poverty line. This money would allow for the necessities of food, housing, and transportation. This amount of money would not allow citizens to live carefree without work or responsibilities, although would give the safety net to allow for job transitions and unemployment.

New jobs that are being created are exponentially harder and more complex than the low skilled jobs that they are replacing. A MBI can allow a newly unemployed low skilled worker to live without fear while learning and advancing themselves to acquire a new job.

Knowledge Management

The issue with capturing and sharing knowledge is that it needs to be updated constantly. Sharing the information to different departments of the company can cause problems because it won't be transferring the knowledge properly. It also limits the space of the knowledge getting organized properly. Having a ton of knowledge leads to time-consuming task of trying to find the past captured knowledge while adding new knowledge to the system.

Another issue is determining which information in the system is valuable information to keep (Verma, 2012). It is not a technology bases concept because humans are the ones that need to keep updating the information. That leads to losing time while figuring out which information is to be kept or to be thrown out.

Causes of KM Problems

Problems that arise with Knowledge Management is creation, storage and retrieval, transfer, and application. Three categories that relate to causes are Structural causes, Human causes, and Technical causes (Ou & Davison, 2007). Figure 6 displays the causes of KM problems and how there is solutions to solve the knowledge management issues.
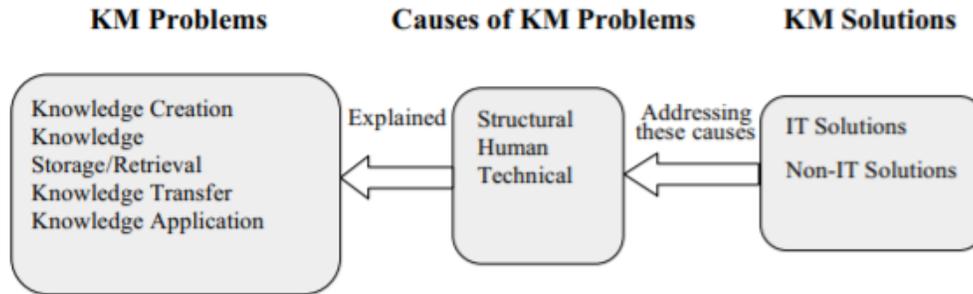
KM Problems　　　　**Causes of KM Problems**　　　　**KM Solutions**

Knowledge Creation
Knowledge
Storage/Retrieval
Knowledge Transfer
Knowledge Application

Explained

Structural
Human
Technical

Addressing
these causes

IT Solutions

Non-IT Solutions

Figure 7: KM Problems, Causes, and Solutions (Ou & Davison, 2007)

Structural Related Causes

Storage and transfer problems are caused by limited training, less resources, and time not dedicated to help employees learn the knowledge needed to use make the business run proficiently. Some structural causes are lack of organization, organizational structure, and inherent organizational culture.

Lack of organization is the first reason why KM causes issues. It creates problems to train employees. If there isn't knowledge that can be used to make the business run proficiently. Then it will not be used in the business properly. It creates problems when the data is transferred. Organizational structure is the next reason why KM causes issues. Inherent organizational culture is final reason why KM causes issues. This is known as the most critical problem in a workplace. There can be conflicts of sharing and transferring knowledge from different departments.

Human Related Causes

Technology needs to update every so often, that gets the system updated to keep the knowledge up to date. Humans have to update the information but if they don't physically tell the program to update then it won't update. That causes old software to remain in the computers. Lack of training causes employees not to want to learn how to work with the software. New employees can feel as if not being trained to use the software can be overwhelming. Causing them to not be interested in learning the new software.

Technical Related Causes

Technical causes are caused by the system becoming slow and hanging when inputting information in the system. When systems start to hang, the employee will have to manually inputted into the system. Which goes back to human related causes with having an outdated system. Technology must update the system every so often. If the system doesn't get

updated occasionally then it will start becoming slow. That can also cause security of the system to go down. Security being down can allow hackers to break into the system to gather information about the business as well as employees.

Intelligent Search

Despite the many benefits that exist in utilizing intelligent search algorithms, there are some drawbacks. Websites are not built in a uniform way, and neither is the information contained within. The science behind determining the most relevant results is not pure. Algorithms that might apply successfully to one website might not be met with the same level of success on another. This has the potential to cause a steep learning curve in the growth level of the AI system.

There are large investment costs associated with developing a high-level complexity algorithm like intelligent search. The potential and the benefits that can be achieved should be weighed against the significant undertaking.

Another issue that is present in search algorithms is the dependency on the information contained in external websites. The veracity of searchable information fitting the criteria for inclusion in a result can never entirely be one hundred percent. This dependency means that the reliability of results might not meet the user's expected threshold.

Performance

The term "intelligent search" can mean a number of different things depending on who is asked. The driving idea behind the concept is predominantly used to describe the provision of better interpretation of searches with better results for a user each time. However, its application varies across several use cases.

For example, web service based intelligent search on legal documents looks to relate legal cases to each other and compare details simultaneously. Performing searches on a web index leads to challenges in speed of query execution. Attempts to increase search speed are performed by designing a clustering module that reduces the necessary volume of search space. The clustering module itself also presents a challenge to overall performance of the system. (Huang & Wong, 2019)

Structure

Information is stored in a variety of ways. Relational databases have mapping systems that tie keys to values and save information in reliable ways that are generally easy to manipulate. These databases have a pre-defined syntax for navigating pockets of data.

Intelligent search is built to decipher data that is stored in unstructured ways. As a result, finding valuable information from a system is made infinitely harder. One proposal for examining data is to use text similarity. Information extraction technology is utilized to obtain summary and important information for text data on a system. Keyword search and text similarity algorithms are then used for analysis. This system strives to improve the current procedures for automating data analysis. (Yang, Chen, Zhang, Liu, & Li, 2020)

Concise Summary

Using text analytics is the fundamental property to using intelligent search with the help from knowledge management to reach automation. Text analytics uses both structured and unstructured information. Using different methods of extraction depending on the type of data that is being searched. As Big data is extremely complex and can take enormous time to be extracted. Intelligent search uses both formats of database containing all the data. With both gathering and collecting data intelligent searches depends on the help of text analytics to interrupt the data that is being searched for. Even after the data is extracted intelligent searches still depends on certain algorithms to complete its searches. Intelligent searches have become adaptive to certain algorithms to solve certain task to use the full capacity from its AI's. This information can then be extracted in many forms such as outputs to a screen or to an archive of data files. In either way there must be some sort of organization system put in place. Otherwise the data is useless and can become corrupt data over time as more and more random data keeps getting stored. Causing a snowball effect if the data keeps accumulating there is unnecessary use of memory that could then be used for other tasks

Knowledge management helps map out the information into specific categories. Allowing easy access to the data for future references rather than having the data all clumped up together. This creates a structure to the data making the access more reliable and faster to reach. This organizational system can then be access to help improve everyday equipment and software to reach its maximum potential. Thus, help create and develop new ideas to improve our everyday life's using automation. Reducing the number of medial tasks that can be done by some type of machinery or equipment. Which is meant to help us in the long run but coming with a few consequences. Having these items keep records when they encounter any problem. They retain data that is stored which can then be extracted using the fundamental property of text analytics. Which restarts the endless cycle to improve our technology and our life's.

Each aspect depends on one another to be able to work together to achieve a common goal. It's a never ending cycle that cannot be reached if there is a missing portion. From having text analytics discover data that is not yet seen as important from information gather from intelligent searches. That is used to create data and train AI's from the information that was organized by the knowledge management system. Only then can we start seeing change from the automation sector that is formed. AI's at this point now focus on keeping logs of failures and success to improve itself. Sending this data to be analyze and bring it to the start of the cycle once again. This in its own way is a self-sustained living organism that depends on one another starting with its foundation.

Extended Resources

Text Analytics

1. This video helps explain what big data is and how data started to get shared to create the idea of big data. Using big data in many fields of study to help solve problems. https://youtu.be/j-0cUmUyb-Y

2. In this video they discuss how big data functions and how it operates in terms of memory. How it impacts your ever day life. https://youtu.be/0Q3sRSUYmys

3. This ties a few ideas of how automation and text analytics work with each other https://dialnet.unirioja.es/servlet/articulo?codigo=5573981

Automation

4. In this video they discuss how artificial intelligence allowing for automation of complex tasks will affect humans. Increase in complexity of available jobs causing for structural unemployment. https://www.youtube.com/watch?v=WSKi8HfcxEk&ab_channel=Kurzgesagt%E2%80%93InaNutshell

5. This video discusses the different forms of structural unemployment. Long term and persistent unemployment can be cause by many factors with one of them being advancements in technology causing for a sudden shift in job flow. https://www.youtube.com/watch?v=_t-ZDHFr73s&ab_channel=MarginalRevolutionUniversity

6. This video examines a type of universal basic income, called minimum basic income. This income is to provide for the basic needs of living such as housing, food, and transportation. https://www.youtube.com/watch?v=kl39KHS07Xc&ab_channel=Kurzgesagt%E2%80%93InaNutshell

Knowledge Management

7. This video talks about Knowledge Management. It goes in depth with what a knowledge management. It is a short video to help understand what a Knowledge Management can do to help a business. https://www.youtube.com/watch?v=k3jo7oWzUUc

8. This video shows how an employer can use Knowledge Management software to use for their company. It shows how to input information about a new employee. https://www.youtube.com/watch?v=skCEiEAzslM

9. This video talks about how to determine the best software that a business can use for Knowledge Management. It shows how an employer can get a report on the training

courses the employees have done or must do. It allows the employer to assign training courses to new employees as well as old employees.
https://www.youtube.com/watch?v=csXgIf79VlQ
10. This article gives a background information on what Knowledge Management is.
https://www.omnisci.com/technical-glossary/knowledge-management

Intelligent Search

11. This is a short video talking about some of the benefits of intelligent search and how some of the largest companies, in this case Accenture, are using it to improve bottom-line in the business space:
https://www.youtube.com/watch?v=sN15wTTfRjk&feature=emb_title
12. This Oracle article talks about what intelligent Search is and discusses potential benefits.
https://www.oracle.com/business-analytics/intelligent-search.html

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