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Provide a prognosis for Chief Data Officers and the Information Quality field in five years.

Chief Data Officer is an officer of a large company responsible for governing and utilizing information as an asset for-profit business or a large company through data processing, data analysis, information trading and data mining. CDO's primary responsibilities include; a proper understanding of data strategies and the business at large, implementation of data strategies, managing technical teams in the company, adequate management of data, formulating and implementing of data privacy policies, increasing revenue and cuts costs based on the data, gives an overview of values and status and importance of data to all members of the company and staff, and applying data knowledge in the company. Chief data officers give their reports to the chief executive officer of the corporate. However, this factor can vary in some corporate businesses. The Chief Data Officer, also known as the CDO, is a manager of the data processing and data mining departments in an enterprise-wide and executive management department. CDO is responsible for analyzing and deriving insights from data to inform business strategies. Other duties are heading interdisciplinary teams, streamlining and improving data in enterprise-wide, leading innovation and inventive projects. A CDO has a good track record in information technology, data management and leadership (Nie, 2017).

Initially, the role of chief data officer was not elevated in the 1980s. However, lately, organizations have appreciated information technology in modules such as data integration, data management and business intelligence, and data processing as necessary modules in day-to-day businesses. These roles have been fundamental, and their functions have become more noticeable and visible. The various parts in Information technology have improved areas that use data such

as data systems and opportunities, generating revenue optimization through data, analyzing data as an asset of an organization, and identifying new business opportunities.

With the new emerging trends in Information technology such as service-oriented architecture and secondary data exchange and storage such as database, it is essential to have qualified personnel who have a better knowledge of business and data strategy in information technology, that is a chief data officer and is responsible for explaining customer data policies, value and design of data and why it is considered an asset and its importance to the business.

Recently, the Chief Data Officer is considered the critical strategy person whereby is required to report to the chief strategy officer with the aid of data science. The CSO is responsible for measuring various businesses and defines the strategy for the following growth opportunities, better product and services, and what kind of market to engage in future, establishes the type of competitors will find. The role of CDO is greatly appreciated; statistics show that 69.7% of businesses as of 2019 have accepted the role of a CDO. This is a rise from 12% as in 2012.

The chief data officer role is evolving rapidly; in five years, they will probably have the most critical and challenging parts. Many see that people would have known the merits of data of all its modules five years from now and how vital t is. Moreover many, businesses will appreciate and embrace having a chief data officer. There has been an emerging issue of covid 19 that might take longer before the pandemic's solution will be managed. The pandemic has made many business models be done on their heads, customer trends drastically changed, and the s trend will continue for a longer, more extended time. In five years, a CDO will be required to be the leader of an organization's overall strategy. The CDO will be needed to deliver new ways to harness data and provide great insights quickly to help business embrace new technology.

In five years, great numbers organization worldwide would have harnessed the data that flows in and out of their systems to gain better sales accurately, retain their customers, the invention of new products, the satisfaction of employees, reducing Froud and many others. In other words, data will be taken as a commodity that must be harnessed by one's business to be at per with the new technology. A CDO will no longer be responsible for maintaining data or regulatory compliance and the entire well being of the business. The chief data officer will be taken as the most critical member of the executive team. An estimate shows that the presence of CDO's in organizations will drastically increase to 90% by 2020. In 2018, businesses embraced the role of a CDO, and it rose from 12% to 70%.

Initially, a chief data officer's role was to be responsible for the federal finance laws, a prominent surveyor who focuses on governance and regulation. However, lately the technology improvement in terms of hardware and more advanced software's, there was some expansion in data analytics, this stimulated the executive to note the potentiality of great data utilization in an organization, hence the appointment of a CDO who will be able to monitor data in a better way for productivity, new efficiencies and overall growth of the business.

Currently, departments dealing with data were not previously available to customer support or was not commonly used in marketing. In five years, the time we hope that the future of a chief direct officer will enable the data to exist in the entire organization, to connect everyone in the organization starting from the design engineers to the customers. In future we expect a CDO to now serve as the head of, great innovation spear. The three major areas that a CDO is currently having are self-service, governance and data, and general analysis. In future a data officer will be relied on to formulate these three needs and to deliver the best unified analytics data management solution best-unified organization. A data Meer spotlight enables an

organization to access, collaborate and analyze data that is in a hybrid landscape to enable the elimination of analytic blind sallow businesses will have embraced the data Meer spotlight, which is controlled by CDO and will enable faster and more trusted business datahelpsis by maintaining strong governance and security. A spotlight robust rally built for cloud and facilitated the business to embrace the cloud's cost and benefits. In five years, a CDO will be using the spotlight platform to ensure that the business organization is self-sufficient in their analytics needed by data and control the freeing up of data for more critical projects. The Chief Security Officers will also require this spotlight. In conclusion, we see the role of a chief data officer advancing and, the CDO will be considered the most important person in an organization.

Information quality is a crucial concern in organizations and an introductory module in researching information system management. The drastic growth of data warehouses and the direct access of data from various sources by managers and users that use the information has significantly increased the basic need for great awareness of high-quality data in a different institution. Most researchers have considered this module to be very crucial and essential. Many researchers are aiming at increasing the information quality by attempt g various techniques. In multiple industries, this information has been rated among the most helpful information.

Moreover, in many industries, information quality has been a crucial concern in data warehousing projects. Despite analyzing and improving information quality over the years, only piece-mean and Hoc techniques are available to analyze and measure and enhance the quality of the information in institutions. His results to many organizations being unable to develop better and comprehensive measures of the information quality and their effort to improve this module have borne no fruits. In five years, the information quality field will improve compared to how it is now. There is no way of assessing the quality of information; this is a module that we are

forecasting will have been improved in five years—moreover, development of an overall model that is accompanied by an assessment instrument for measuring the information quality.

Furthermore, in five years, there will be developed technology that will compare the assessment results against benchmarked to all the stakeholders. This kind of techniques will be extended to improve the information quality efforts. In future, most organizations will understand the importance of quality information, primarily the managers and the consumers. The various future models with different quadrants depend on whether the quadrant is a service or a product. The other thing that will be developed is questioner for measuring the IQ with the dimension of information quality importance to the organization's manager and their products.

The future of the information quality field is viewed as a future with more invention than the previous years; earlier in this field, only the critical dimensions to consumers about the information quality field were highlighted. Moreover, they only used traditional methods of checking the quality of information. In future, we expect that the Information quality field will divide this field into different modules such as intrinsic information quality, representable quality information, contextual accessibility quality information, among other types of information. The module of intrinsic implies about the own rate of data. Contextual information highlights the kind of information quality that I required to be qualified at hand. The other two highlight the computer systems' essentials on accessing and storing quality information, a system that should interpret the input information and represent it consistently. In future, we also expect that the information quality projects will have been improved in the various organization since they use it as the codes of content analysis. Moreover, different IQ projects will be enhanced to a specific super level.

In conclusion, the field of information quality is not yet appreciated and embraced by different organizations; however, some five years to come, the growth of this field will be rapid. In five years, it is proposed that there will include different techniques to identify the quality of information. However, this module is yet to be discovered by other technologists. In the future, the information quality field will be divided into different modules discussed above in detail and better techniques for assessing the quality of information.

Give a working definition of Data Washing Machines (DWM) from your library research.

A data washing machine is an experiment used to provide nuanced data privacy. It uses a principle that states that the confidentiality of data should be a sliding scale, not only an off and on the switch; the code states that there should be many options between collection none of the data and all the data. A data washing machine is made up of an adjustable feature called the privacy dial that allows the developers to reduce or increase the type of information collected by eliminating different quantities of personally identifiable information. Data developers should provide users with a bottom for the intensity of privacy they want by understanding how the varying levels of data sharing will affect their experience. The users should also be able to control how they can share the data and the kind of data they can receive. In the lower dial setting, any personal data that can be used to identify a person directly should be removed. As the settings improve, the eliminated data should not be used now to identify a person, but it should provide more information about the individual. A data washing machine is a model that has been thoroughly tested to ensure and guarantee that all the personal data that is required to be removed has been removing. However, it helps increase user privacy when users send us data containing their personal information.

A data washing machine is an experiment in giving nuanced data privacy, where better modifications of confidentiality beyond the input and output model of collecting data. Moreover, the default model is that an application contains all the possible data that a user provides or the user denies giving data, and nothing is collected. By the use of a data washing machine, then we test this concept. The main target of a washing machine is personal data, whereby it uses natural language, that is, strings that are readable by human. Regularly the receiver gets the information necessary to provide a service, although the stings offer private information.

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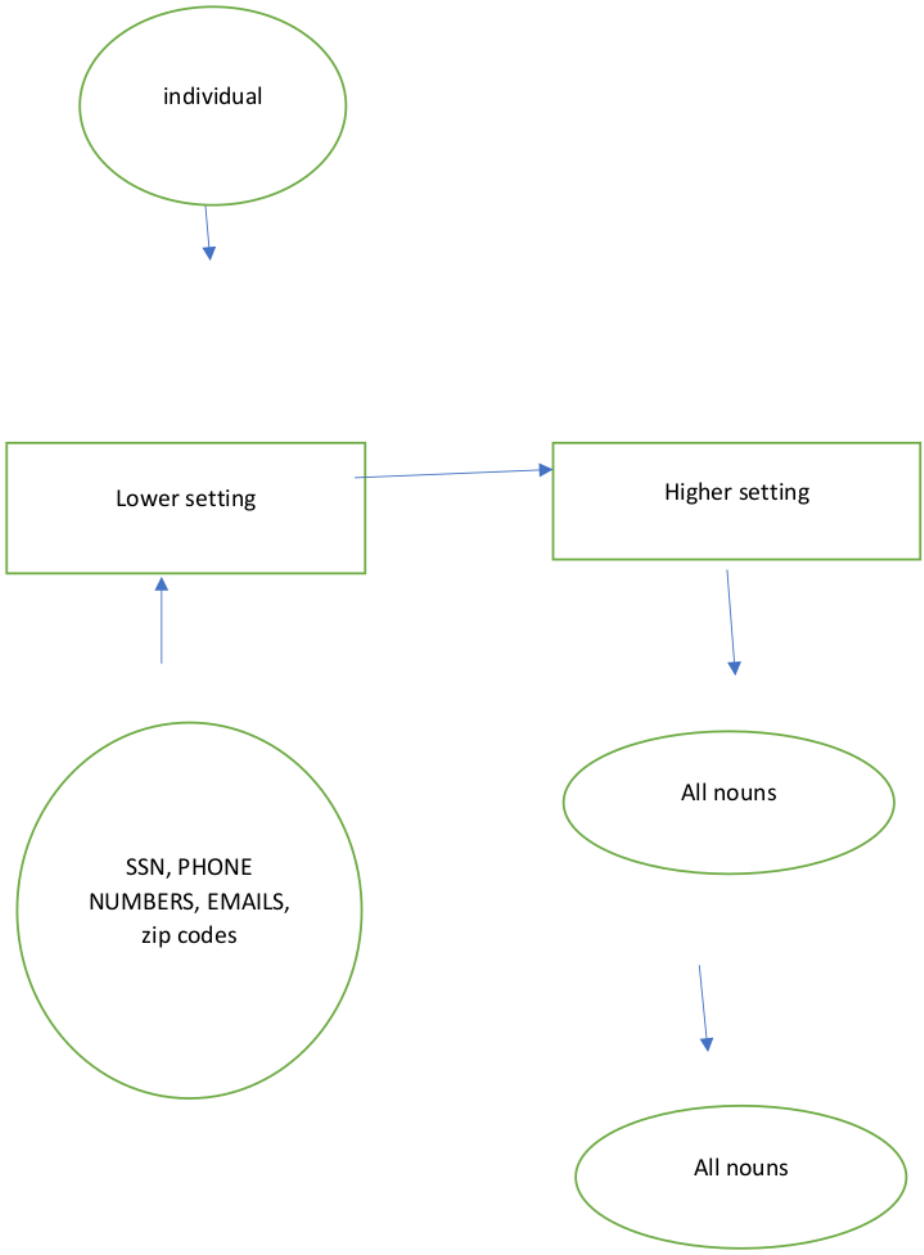
In conclusion, a data washing machine is used for data privacy; various levels of how the modules are eliminated are discussed above. A data washing machine is also intensely used to protect an individual's data.

Propose a conceptual framework based on what you have learned after conducting a library research on DMW's


individual
Lower setting
Higher setting
SSN, PHONE NUMBERS, EMAILS, zip codes
All nouns
All nouns

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The data washing Machine's main feature is the privacy dial; there are different pieces of personal data at each setting. At each stage, there are pieces of personal data that are removed. At the SNN, email address, name, zip code, phone number, company, proper and all kind of nouns. The following module is the lower setting where the data identification of an individual. In the higher environment module, the data identification is less compared to the higher environment, but this information can be linked to partially identifying an individual. Social security numbers and email addresses are only for one person. The address is unique; however, many people can

have the same name; hence the social security number is positioned at a lower dial setting than a person's name. The ordering of the dial setting is st according to one's preference. Removing the personal data depending on the use case may affect the remaining utility of the text. However, this is not a problem on the lower dial settings because it is more of a problem at the module where there are the higher settings where the proper and all nouns are removed. Moreover, removing the most identifying module of personal data should not affect the accuracy. However, if the accuracy goes down for the clean data during an identification, it means that the project has overfitted to some particular modules in the original data (Tuma,2021).

There are multiple methods used in the data washing machine to identify and remove different forms of personal data. Below is an example of the ways;

Regular expression; Modules of personal data have a different kind of specific format, such as Social security numbers, email addresses phone numbers. They can be removed and identified by a regular expression. One of the cons of this type of method is that it cannot formulate poorly formatted data. Although in some cases, it may be used to remove all the large numbers present.

They named entity recognizing models. Models are made to identify text that can be categorized as entities, modules such as people, words in a sentence, and well-labelled places.

Custom machine learning models; allow the identification of personal data specific to the table's questions.

No method is guaranteed in the data washing machines. All forms have a limitation. No way has yet been proved to remove all the present personal data.

Propose research directions or R&D approaches for DWM based on what you have learned

Research on how the developer can turn the privacy dial as high s possible should be researched while still having the apps utility should be well research. The various modules on the data privacy on the privacy module and how to control the should be well and broadly researched.

Moreover, more research on data science and the exploring and research on the trade offs of a machine's earning system between their accuracy and the data output system should be achieved. Furthermore, great research on how to diversify data privacy should be achieved and more techniques on getting rid of the collect all the data to collect no data. Broad information on cleaning data emergences and making them look great. In addition, the on the control of the privacy dial should be improved in a way that the users the users can be able to provide explicit consent over the kind of data they are sharing and what they are willing to share.

In conclusion, data washing machine is a great module in data privacy and it provides the users with the advantage of keeping their personal information private. Moreover, it makes data privacy more available and accessible. It has also made people to be in control of their privacy and it has become more tangible by the use of the privacy dial

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