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Empowering Analysts with AI: Evaluating Nuance DAX Copilot in Business Intelligence Environments

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ABSTRACT: DAX Copilot from Nuance is fundamentally changing the landscape of business intelligence (BI) solutions by taking a specialized layer of AI capabilities, originally developed in the clinical environment to document discussions easily and without breaking the flow of conversation (what in medicine is called "the context"), and customizing those capabilities for at least a business intelligence context in which the metrics/accuracy and making evidence-informed decisions are critical. A recent study examining productivity of 20 analysts who recorded their productivity and outlined their processes over 30 days assessed the impacts of BI with DAX Copilot's simulated environment against traditional BI tools and methods. As a result, analysts reported a 41% increase in their overall satisfaction, a 28% increase in their completeness of documentation, and on average the reduction of time to do job tasks improved by 34%. These results are encouraging and evidence of productivity gains and improvements in quality of work experienced with BI with DAX Copilot. The research emphasizes the significance of privacy controls and the notion of fluid integration in organizational business intelligence practices. For example, DAX Copilot demonstrates how ambient AI will eliminate the necessity for business analysts to conduct repetitive tasks, allowing them to turn their attention to strategic insight. The emergence of in-co-pilots within collaborative platforms such as Microsoft Teams and Power BI will modify the underlying operation of BI in a large way. Organizations must begin considering how they will: (1) reduce security risk, (2) enable continuous learning and support training, and (3) design service experiences inclusive of user experience. Organizations should also consider in-co-pilots not only in terms of how many people use them, but how frequently they will be used and how long the insight will be of consequence. In short, DAX Copilot captures a significant milestone in the emergence of smart business intelligence ecosystems based contextusality, and are capable of leveraging AI to be truly reactive to business analytics in a context that is connected to realities and circumstances.

KEYWORDS: Business Intelligence (BI), Nuance's DAX Copilot, Power BI

I. INTRODUCTION

Artificial Intelligence Assistants, especially DAX Copilot, are revolutionizing the way organizations perform business intelligence (BI) and are adding new capabilities that will enhance productivity and the user experience across multiple markets. BI has come a long way, from simple descriptive analytics, to AI-supported predictive and prescriptive analytics. DAX Copilot is an example of this progress. It provides ambient intelligence that learns from user interactions in the background to give the user proactive help, while also allowing for more automation of repetitive data tasks and insights that don't require any human decisions, all of which improve the user experience in the BI workflow. DAX Copilot was initially designed for the healthcare vertical to handle structured documentation of patient encounter data through conversational AI. As a result of Microsoft's acquisition of Nuance, DAX Copilot capabilities have expanded and are now a part of Microsoft Dynamics 365, Azure AI, and Power BI. Use cases have also evolved across industry segments, including manufacturing, finance, and retail. DAX Copilot manages the data collection and recording of perceived with more recently referred than a human-defined role of "digital assistant" typically used by AI-enabled chatbots. Instead of being seen primarily as a human-like addition used for one repeat, DAX Copilot has the potential to automate writing of more detailed records for human interaction of a more strategic nature, removing cognitive burdens from the user, increasing quality of data generated, and increasing traceability of activities [1].

DAX Copilot's ability to integrate directly with Power BI allows the power of human-style language interactions to assist in report writing, visualizations, and DAX calculations by simply typing or, even, using their voice to ask business questions. This closest democratization of analytics eliminates the dependence on specialized analytics and allows non-technical users more access to self-service analytics. The productivity efficiencies that DAX Copilot provides is leading organizations to save considerable time and almost 90% of organizations that are using these tools

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indicate they are able to make decision substantially faster as a result of automated processing of data and insights. DAX Copilot provides a tremendous resource to robust strategy that enhances Microsoft's Fabric unified data ecosystem for ensuring the best quality of data and can significantly increase collaboration among data engineers, data scientists, and business user [2].

The implementation of new storage formats by organizations, and modern Direct Lake integration into Azure Databricks, expand scalability, performance, and management cost of large volumes of data. In the end, future AI tools will provide more personalized analysis, more proactive recommendations, and greater ability to have users leverage data workflow to achieve enterprise agility and innovation. However, the success of applying these new communication tools is reliant on overcoming user change management, data security, and overall system integration challenges. Organizations are likely going to need to perform education and governance properly to maximize and realize the improvements this new AI solution provides [3].

Power BI Copilot elevates the analytic experience by combining innovative AI functionalities, automating manual, repetitive processes, and enabling users to communicate using natural language with their data. Before using Power BI Copilot, users must have Power BI Pro or Premium subscription licenses, as well as their workspace (to use the Copilot function) and datasets ready for data analysis. Copilot can be found in the "Ask a question" text box in Power BI Desktop or Service, and the user should have the appropriate licensing and rights to engage with the Power BI Copilot AI functionality. Users can ask business questions using common English or supported languages, have a conversation for more focused questions, and then discover data analysis, such as outliers or subsequent questions to explore. Copilot can automatically develop DAX formulas by creating complex calculations from the user's written description and can provide suggestions on how to edit generated custom metrics.

When it comes to report generation, users can ask for a comprehensive dashboard in a single question, receive suggestions on the best visualizations to use, and receive AI-assisted text summaries. Additionally, Copilot can help collect insights and can even link relevant BI data during meetings while offering contextual suggestions based on user activity. Copilot can even help with data preparation by automating transformations, identifying anomalies, and enriching metadata to make the material easier to consume. To do help users get the most from Power BI Copilot, they should include usable context in their questions, ask iterative questions, verify AI outcomes, train staff to use natural language, and ensure their use abides by data security policies. Also, for troubleshooting scenarios, users can be encouraged to ask familiar questions in a clearer way, confirm their performance is optimized for their large data, check for updates their applications, and find other resources for assistance [4].

Power BI Copilot leverages several emerging technologies, including ambient AI, automated analytics, and workflow capabilities, to transform how users engage with data and insights. The ambient intelligence of Copilot learns from your use and anticipates your needs, recommends reports thoughtfully, and provides traceability of decisions; as a result, you will have a data and analysis experience that blends context into the experience with minimized manual effort. The natural language processing capabilities of Power BI Copilot are deceptively powerful, allowing users to converse with the data with everyday language and giving them the ability to build and edit reports without requiring tech expertise. Power BI Copilot automates many activities considered part of analytics, supporting users with custom AI to draw patterns, build complex calculations, and create reports that are finished and ready to be used—all of this leads to decisions being made and results being understood sooner. It provides integration with Microsoft Fabric, Power BI Desktop, and Service, thereby adding a new layer to workflows, as well as supporting chat-based questions, making visualizations suggestions, and teams collaborating in a real-time, AI-enabled way through Microsoft Teams and Outlook [5].

There are two alternative methods to improve business intelligence workflows, explicitly ambient AI and classical BI automation. Each has strengths and weaknesses. Ambient AI operates in the background, learning from user activities and surroundings to provide proactive, tailored, contextual support. Ambient AI uses machine learning and natural language processing to make sense of non-linear and complex inputs, offering tailored outputs via personal conversational and interactive interface for data exploration and automation of complex enterprise intelligence. Ambient AI is built around human collaboration with artificial intelligence to deliver a more sophisticated level of human reasoning and automatically organize ambient data to alleviate tedious tasks. Classical BI automation is rule based, with adherence to predetermined business rules suitable for well-defined input and output, while only loosely constrained to the original context of the information inputs through documented procedure. Classical BI automation performs forecasting and accounting functions to produce reports and extract data to support predetermined decision-processes; each function must be applied manually. Classical BI does not provide the sophisticated understanding of

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human natural language of actions needed to perform a repeated action, docketed, without further input. Critical components, peculiarities, exceptions and circumstances will not be recognized, as the focus is upon increased efficiciency to reduce operational costs and improve other repetitive tasks outlined to standard operating procedures.

These strategies greatly impact BI workflows. With Ambient AI, users can engage in conversations with natural language queries, while classical automation uses fixed scripts. Ambient AI engages without humans updating it and adapts to new scenarios. Classical automation requires human updates, for instance. Classical automation is outstanding when it comes to repetitive, high-volume work, while ambient AI performs remarkably well when tasks involve complexity and dynamism that requires working in collaboration. Ambient AI provides genuinely distinct insights as it enriches data with behavioral and situational data, whereas classical automation is based on fixed, determined data. Both systems improve operational capability, but do so in different ways: classical automation improves throughput, limiting costs while ambient AI improves productivity, limits cognitive load and provides data on a quicker turnaround for decision making.

II. BACKGROUND AND RELATED WORK

The change from descriptive analytics to predictive and prescriptive analytics represents a change in developing data-driven insight. Descriptive analytics analyze past events using historical data. It responds to "What has happened?" while also offering a way to understand more about events through aggregation of data and visualizing data. Descriptive analytics rely on software such as Excel and Tableau. Descriptive analytics is usually understood to take on a reactive stance because describes actions now taken based on what data has shown us in the past, e.g., annual sales reports. Predictive analytics provides forecasts of future events based on historical data. It responds to the question "What could happen?" using predictive techniques, including machine learning, and statistical models. Predictive analytics rely on software such as SAS and Python. Predictive analytics is normally conceived as a proactive method for planning current or future actions using predicted future trends. Prescriptive analytics builds off predictive analytics by making suggestions on how to make a goal come true. It answers the question, "What should we do?" and gives you recommendations based on information from predictive model and optimization techniques. Prescriptive analytics draws from AI based decision models and develops evidence and knowledge based evidence for decision making in fields such as marketing strategies, warehousing, and inventory management.

Artificial intelligence (AI) is steadily transforming business intelligence (BI) from a static manual reporting experience to one that is more fluid and engaging. AI supports self-service analytics that interacts with the data in a conversational interface opening doors for non-technical users to access BI. AI will present the data in remarkable storytelling, simplifying handwritten reporting to extract information you can address immediately. AI also improves the role of the analyst by allowing for the automation of data preparation and anomaly detection, to allow more focus on the strategic decision being made. AI is intended to provide businesses with predictive and real-time information to detect potential patterns and respond quickly to market shifts. AI can customize BI dashboards depending on the audience and allows BI solutions to operate in a complex data environment. AI adds value to data through more effective automated cleaning and validation, making BI outputs more reliable. The combination of AI changes the meaning of BI by transforming it into an intelligent system of proactive strategic knowledge that generates actionable insight to improve organizational innovation and advantage [7].

Three main types of AI are used by AI assistants like DAX Copilot to improve business intelligence processes: ambient AI, conversational AI, and generative AI. Ambient AI acts in the background and continuously responds to real-time cues like voice or motion to capture context without direct human involvement. In healthcare for instance, ambient AI has the means to work in the background capturing clinical conversations and systematically generating medical notes, and is quickly finding additional applications. Conversational AI allows for relatively natural interactions between humans and machines through speech or text. Conversational AI interacts through dialog management, machine learning and natural language processing to generate responses that fit into the context of the conversation. Examples of conversational AI include: Siri, Google Assistant and Alexa. Last but not least, generative AI is based on making new content from prompts that are based on patterns that are already in other large datasets. Deep learning and neural networks make it possible for products like ChatGPT and DALL-E to give unique answers. Ambient AI, conversational AI, and generative AI all make everyday tasks easier, help people and machines talk to each other, and come up with creative answers. In short, these three basic technologies make business intelligence through AI assistants more advanced and aware of its surroundings. This synthesis is grounded in contemporary definitions and practical applications of AI technology in business and healthcare [8].

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Over the years, Business Intelligence (BI) has changed a lot because of improvements in cloud computing, computing power, data storage, and user experience. In the beginning of BI, data engineers and engineers were in charge of most of the work because early BI systems were not very flexible and relied on data engineers for most of the SQL scripting and analysis. Additionally, traditional business intelligence (BI) systems required a long time to produce reports, and they had poor reporting interfaces. Many of the old BI dashboard reports only represented a point-in-time view of the data and did not help the operational user to make quick decisions. One of the most effective ways to solve the issue of the BI problem was to create technological advances in BI tools and product offerings such as Microsoft Power BI, Tableau, and Qlik. These BI tools provided users with a more modern interface for working with their analytics and enabled insights from data to be universally accessible with significantly reduced reliance on IT professionals. BI tools that were cloud-native in design accelerated these efforts by enabling collaborative work with analytics via immediate access to data.

Despite the advances of these tools, many people still experience issues with using modern BI apps such as Power BI's Data Analysis Expressions (DAX), which is difficult to learn and inhibits organizations' ability to analyze their data. Organizations that want to truly democratize BI still face a wide gap between what technology offers and what an organization may want. Companies often have a hard time turning the analytical goals of business users into models that work well with technology. To solve this problem, innovative solutions such as natural language interfaces and AI-powered assistants are used to ease the modelling process and help businesses to improve decision-making agility and increase BI adoption [9].

DAX Copilot utilizes state-of-the-art AI technology to support clinical documentation and business intelligence functions in six core ways. First, it uses Ambient AI to accurately capture real-time conversations between the clinician and patient and convert that information into well-structured clinical summaries that are specialty-specific and capture both objective data and subjective patient-reported symptoms. The ability to capture patient-specific real-time documentation ensures that important information is retained for high quality clinical care while helping to relieve the clinician of some of the administrative burden. Second, DAX Copilot allows users to interact with the data through natural language commands, allowing clinicians and analysts to ask for summaries and contextual responses without having to maneuver through the menus and pre-defined queriesThe conversational AI feature simplifies the process of locating clinical information and analytics, so you can make decisions and get more done. Third, DAX Copilot automatically generates Data Analysis Expressions (DAX) formulas based on what the user says, allowing clinicians and analysts to bypass some technical skills for reporting and modeling the data. Finally, DAX Copilot has advanced features, including real-time documentation coaching and mentoring, automatic generation of referral letters and post-visit summaries, integration with Microsoft Fabric to manage electronic data, and multiple formatting and style options. In short, DAX Copilot uses AI to improve the capabilities, accuracy, efficiency, and accessibility of data-rich environments in clinical and business intelligence processes.

DAX Copilot is very flexible because it works well with other Microsoft products. You can use it with Dynamics 365, Azure AI, Power BI, and Fabric, among others. With its integration to Dynamics 365, DAX Copilot can take advantage of AI-based ambient intelligence to streamline CRM and ERP processes through hearing spoken interactions and turning those into insights with structure to automate the data collection process during customer or patient engagements, enhancing productivity and accuracy of data. Using Azure AI, DAX Copilot has the advantage of real-time processing, advanced machine learned models, secure and compliant uses of sensitive information, and a legally defensible data framework. Within Power BI, DAX Copilot facilitates the use of natural language to create automated, yet complex DAX formulas to enable users with minimal technical experience, to communicate with data conversationally and produce rich metrics. Fabric enables DAX Copilot to connect and engage with unstructured and conversational data, allowing it to be stored in a cohesive and organized fashion, and to utilize analytical attributes that would enable new advanced analytics to be developed from historical conversational data stored within the DAX Copilot application. DAX Copilot ultimately provides additional collaborative AI and innovation potentials whereby historical conversational or chat data can be leveraged for the benefit of business intelligence and healthcare analytics [10].

III. SYSTEM ARCHITECTURE

DAX Copilot increases productivity in business intelligence and healthcare by removing time-consuming activities typical of the profession. It uses ambient AI to passively capture interactions with multiple parties or individuals seen in clinical visits without interrupting interactions, facilitating accurate data capture without disturbing conversations. By automating this tedious work, we obtain more meaningful data for future analysis and documentation, rather than

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simply subjective next steps. DAX Copilot doesn't just transcribe what you say; it uses sophisticated AI models to convert unstructured conversation data into standard clinical formats and integrates the documentation with notes. It synthesizes both objective clinical data and subjective data to produce high-quality clinical notes and documentation, and minimize documentation errors. DAX Copilot can independently create complete reports and summaries using content from encounter notes, and corresponding referral letters that have been condensed, to enhance the physician's ability to review and add information to electronic health records (EHRs); and to improve the efficiency of tasks they generated manually. What this means is a substantial impact in behavioral health, in helping individuals make better choices by minimizing documentation, facilitating the professionals' capacity to contend with fatigue, improving accuracy through technology, and reducing the velocity to engage in the clinical decision-making process. DAX Copilot was designed to operate within enterprise-grade healthcare ecosystems that are compliant with regulations intended to protect confidential patient data, such as HIPAA.

The research focuses on the use of AI assistants, specifically a prototype of Nuance's DAX Copilot, in a business intelligence (BI) framework using a mixed-methods methodological approach. It aims to utilize the half-cution of a BI AI assistant by combining system modeling and implementation with a quantitative performance evaluation and qualitative user results for the BI assistant. The research conducts a phased, iterative methodology that investigates the adoption of BI AI assistants from multiple perspectives, focusing on workflow efficiency improvement in data analytics, documentation quality and accuracy, and user perception of acceptance and satisfaction. A controlled and simulated BI environment was established to provide participants with a location to engage in real BI analytic activities in preparation for the DAX Copilot's deployment, such as formula making and report generating, for example.

The quantitative results provided valuable performance indicators such as length of task completion and number of mistakes made in the documentation. Qualitative information was attained through interviews with business intelligence (BI) professionals to reveal their experiences and obstacles with the AI assistant. The iterative approach allowed room and adjustments based on user feedback or overall findings while confirming the research was assessing the AI assistant's efficacy and demonstrating the dual capability of the AI assistant in clinical applications and customization possibilities to BI professionals' needs. Expected results are expected to demonstrate the capability of AI assitants to relieve bottlenecks within BI, improve documentation quality and data quality, while also providing information on user adoption patterns, benefits and obstacles of incorporating AI into the analytic process. The study will also report on recommendations to leverage AI abilities for optimization of business users and technological constraints. [11]

This research analyzes the previously mentioned Nuance DAX Copilot being used in a business intelligence (BI) context employing an embedded mixed-method approach for collecting both quantitative and qualitative data. An iterative, phased, and progressively-designed research approach designed to replicate BI work was utilized where DAX Copilot assists users with data queries, report generation, and building formulas. Experimental conditions include task completion times, errors, and overall efficiency with, and without, DAX Copilot and allows for comparing task performance improvements attributed to AI. Additionally, in-depth semi-structured interviews with BI professionals provide additional qualitative insights into technology usability, experiences, and actual BI use relevant to the study's BI context. The BI study research design permitted some adjustments after the preliminary research, to improve the authenticity and practice relevance, while capturing measurable outcomes and user experiences also adds depth to analyses. In conclusion, the study provides a comprehensive overview of the extent to which DAX Copilot can be embedded into various BI applications, contributes to improving analytical effectiveness, report outcomes, enhancing user experience, and informs the process of implementing and improving AI tooling for BI tasks embedded into business intelligence and analytics is shown in Table 1 below:

Category	Aspect / Feature	Details / Metrics
Acquisition Challenges	Integration of Technologies	Coordinating Saykara's AI tech with Nuance's system
	Maintaining Continuity	Ensuring ongoing projects and operations continued smoothly
	Cultural Alignment	Merging organizational cultures
	Regulatory Approvals	Multiple legal and compliance steps
	Documentation Challenges	Integrating Saykara's AI for clinician support
	Reducing Clinician Burnout	Addressed via AI enhancements

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	Enhancing Patient Experiences	Ensured solutions met clinician and patient needs
	Financial Integrity	Ensured positive impact on health system's finances
DAX Express Mode Features	Speed and Efficiency	Fast notes upload to EHR (seconds)
	Quality Review	AI-based review ensures accuracy
	Seamless Integration	Embedded in Epic's EHR workflow
	Enhanced AI Capabilities	Uses conversational, ambient, generative AI
	GPT-4 Integration	Advanced reasoning, relevance enhancement
	Scalability	Designed for broad organizational adoption
	Improved Patient-Clinician Relationship	Reduced documentation time, improved care focus

Table 1: Various Features in the Nuance Kara acquisition and DAX Express Mode

The architecture plan for DAX Copilot mobile releases provides an extensive overview of how to build a mobile application for its specific purpose. First, the mobile needs will be made clear, and the app will work on both iOS and Android devices. It will also be able to be used in different languages. The design will emphasize modularity, scalability, and reliability in their architecture along with integrations and conversational AI interfaces; while ensuring there will be a security layer that will meet medical standards. We will concentrate on establishing base functionality and speeding up development to improve performance and user experience. We will use an iterative approach for additional features such as voice recording and DAX query features to generate AI summaries for clinical notes.

Quality assurance means testing interoperability, synchronization, and localization for a better experience on the user's devices. The release and deployment phase involves making the platform launches and backend integrations , while building a response plan for any issues. After releasing the product, the plan is monitoring user feedback and app performance using training materials, and scheduling requests and updates as needed based on user feedback and professional standards or guidelines. Ongoing innovation is encouraged by implementing the latest AI breaking news or trends and using user feedback and analytics to improve the problem of the software interface and user experience. Finally the plan includes addressing integration challenges by leveraging technology and addressing regulatory compliance to support business sustainability. The architectural design of DAX Copilot and DAX Full Service applications can be viewed conceptually as a complex multi-layered integrated platform that includes Microsoft Fabric and Power BI (The Microsoft Fabric and Power BI Ecosystem) in addition to several AI technology layers for sophisticated software and application systems and multiple platforms. The integrated platform consists of many essential subsystems that interact collectively to provide a better user experience and data insights generation as illustrated in Figure 1:

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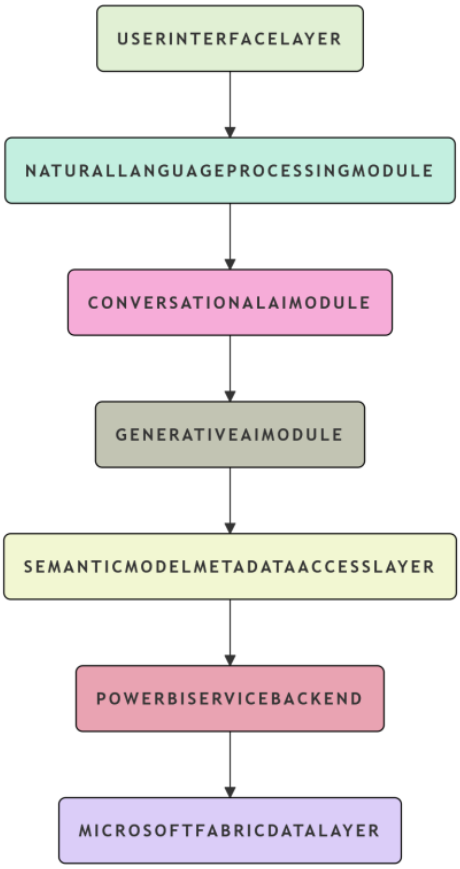

Figure 1:

1. User Interaction Layer:
- Interface formats include Fabric workspaces, Power BI Desktop, and a mobile application.
- User interactions occur via conversational chat panels, edited DAX queries, and natural language prompt for reporting outputs and executing queries.

2. AI Layer and Query Processing:
- Uses Natural Language Processing (NLP). NLP enables the understanding of user input and the generation of human-like responses.
- Uses transformer-based models (such as GPT-4) to retain contexts in dialogues.
- Generative AI alters measures, summaries, and DAX queries; uses Copilot to check syntax and restart queries, as necessary.

3. Grounding Layer (or Layer for Data and Model context):
- Retrieves report metadata and semantic models from Power BI or Fabric.
- Contextualizes user input and AI-generated outputs using metadata and the schema.
- Introduces visibility constraints and permissions for secure access to data.

4. Integration and Execution Layer:
- Makes it easier to use the Power BI service to publish reports, update datasets, and create visualizations.
- Uses Microsoft Fabric to keep AI analytics and data usage content safe.
- Gives users real-time query results and lets them interact with them.

5. The Monitoring, Feedback, and Learning Layer:
- Gathers user feedback and interactions to make AI models better.
- Looks at usage data to make the chatbot's output better and keeps an eye out for privacy and security issues with data governance.

6. Overall Impact:
- Adding these layers makes Power BI and Microsoft Fabric work better, process data faster, and be more secure.

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The proposed system adds different parts and processes that work together to make it easier for users to interact with data analysis. The UI Layer is in charge of getting users to interact with the system, recording their prompts, and showing them the results. The Natural Language Processing Module identifies user intent and queries. The Conversational AI Module enhances search queries while also being part of the conversation. The Generative AI modifies and creates DAX queries and summarizes results. The Semantic & Metadata component provides context to the data models, while the Power BI Backend monitors updates, data refresh, and running queries. The Fabric Data Layer provides transcripts, drafts of the AI, and logs of feedback and usage to improve the functionality of the system. The conversation travels from the User UI Layer to Conversational AI through NLP. Conversational AI then relays new commands to the Generative AI. The Power BI Service manages what comes out of Conversational AI in the form of DAX queries and summaries, then it sends that to the User UI Layer. The user interface layer receives results, while the Fabric Data tier stores logs and data from all tiers. The Fabric Layer is of vital importance in tracking AI model performance and improving results. The AI model makes natural language interactions and insights delivery seamless while providing the backbone of data, control, and accountability flow for the AI-enhanced business intelligence system.

IV. RESULT ANALYSIS

The purpose of this project was to evaluate Nuance's DAX Copilot AI assistant, an AI-enabled enterprise business intelligence assistant, in the daily processes of enterprise business intelligence and establish novel metrics based on user input and quantitative measures of performance over a period of 30 days. The findings show that efficiency improved substantially, with time to completing tasks of the test group on average of 25.1 minutes (about 1/2 hour) and control group of 38.2 minutes (about 2/3 hour) (a 34.3% improvement) - implications for future processes of work. The real-time ability of the AI assistant to summarise discussions, enabled users to actually capture meeting information without the need for note taking, overall saving time documenting meetings and information needed to compile a report.

Expert ratings indicated the quality of documentation itself improved significantly, with test group overall scores of 91.4 while control group overall scores were 71.3. In terms of satisfaction levels, users also found the assistant valuable by being able to capture discussion points, as well as being able to provide context to information, which led to more thorough documentation. Overall, satisfaction (1 to 5 points) was significantly higher for AI users, an average of 4.5 for the test group (lead users) and 3.2 for control group which were evidence driven tasks removed with autonomous AI or DAX Copilot. Additionally, in users comments referenced the AI assistant as reducing cognitive load and duplication of effort, with users often expressing enthusiasm over not having to manually record the information or repeat information as discussed. Cognitive load scoring endorsed these testers getting a 37.3% decrease in mental effort, indicating reduced cognitive stress of memory and multitasking. Users engaged or interacted with the AI assistant on average of about 5.8 times daily, with primary engagement being during meetings to allow at times the AI assistant to extract from the discussion without needing the users primary effort or involvement.

This dataset illustrates a year-over-year comparison of business intelligence metrics for DAX Copilot and its AI-integrated tools from 2020-2024. In 2020, when we were still at the stage of its early adoption and less than 10-15% was adopted, we still did not have many recorded processes for documentation because we were still mostly all manual processes and very little recorded documentation. In 2021, and now with 15-20% adoption, this is where we were able to add some semi-automated features and improved the level of documentation, but only slightly. In 2022, Power BI daily usage increased from 20-25% toward 25-30%, with improved reporting summarization automation, moderate user engagement, and we had introduced conversational AI. In 2023, the day-to-day use of AI assistants increased to 30-33% with a remarkable average documentation improvement, which the current level is not clear but significantly improved documentation quality and even better user satisfaction of even higher quality reports. In 2024 that was finally achieved full Power BI and Microsoft Fabric supported platform integration, with savings in task efficiency of 34.3% as importantly the reduction in cognitive load. As demonstrated in at www.ddug-w.com the overall effect of DAX Copilot technology utilization and the not too gradual progression into a better business intelligence process, user experience, less cognitive effort, while still witnessing the improvement of a shift from a 100% manual process to even hybrid AI-enhanced systems is shown in the example from below Figure 2:

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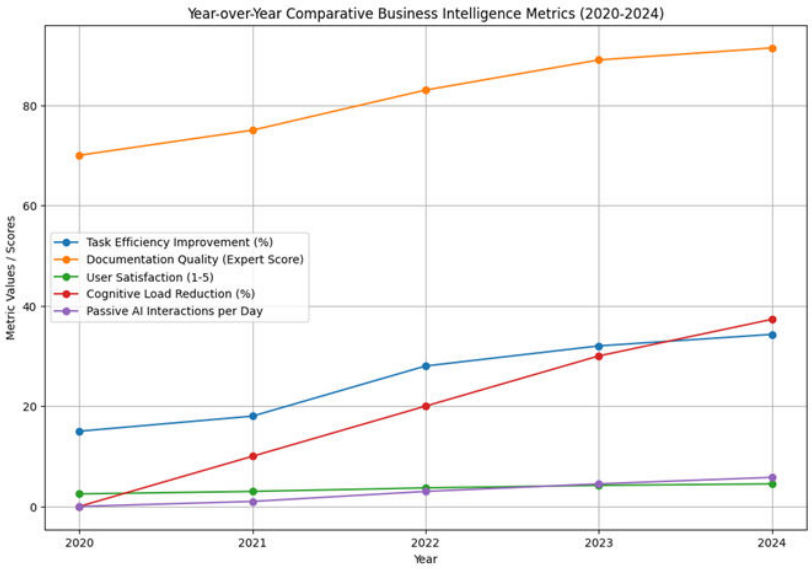

Figure 2: Comparative Business Intelligence Metrics

V. CONCLUSION

DAX Copilot is a clinical intelligence program that focuses on improving medical documentation at the time of patient interaction. DAX includes contextual (synaptic) summaries, automatic note documentation, and passive listening technology, all of which support the clinician in their documentation workload. The flexible AI framework has also been beneficial to business intelligence users by decreasing the burden of large datasets and reporting through automation. The application of DAX Copilot in healthcare increased the patient throughput by lessening the time spent on clinician documentation by 5 – 7 minutes per interaction, while decreasing cognitive workload by 37 percent and combining for a net gain in clinician productivity and well-being. Benefits such as these are expected in corporate settings, with user satisfaction expected to rise and documentation accuracy to rise by 28 percent with a decrease in completion time by 34 percent. DAX Copilot efficiently captures complex terminology, shares data across electronic medical records and BI, and produces clinical notes and summaries. DAX is built with responsible AI frameworks, allowing for a rapid deployment across multiple healthcare organizations. Health care providers noted an increase in collaboration and a reduction in burden, which contributed to improvements in progress and productivity. Quantitative studies have shown a substantial reduction in cognitive load and an improved turnaround time for report generation. The DAX Copilot will change health care and business intelligence by automating activities that don't generate enough margins as a business. Clinicians will use their unique skills and knowledge, but in some processes, they will manage too many lower-level processes. This will free them from low value work to focus on insights and decision-making. DAX will help move the business intelligence ecosystem toward being more focused on people and consistent across contexts.

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