Fast-Evolving Digital Assistants are Getting More Attention from Manufacturers

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Purpose statement

This document provides an overview of features and enhancements included in release 21.04 It is intended solely to help you assess the business benefits of upgrading to 21.04 and to plan your I.T. projects.

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Introduction

Manufacturers are facing a number of challenges as they adapt to the new normal of today's disruptive business environment. Their digital transformation journeys have accelerated and they are forced to adjust their business models so that they can continue to profitably operate under current and future market dynamics. Many of these challenges aren't new to manufacturers per se, but with the increased focus on safety measures and changing regulations worldwide, it has brought certain hurdles to the forefront. These include:

- Finding new ways to engage customers who have rising expectations for high touch service;
- Adapting the workforce to remote work environments and managing essential employees dealing with new workplace rules at facilities;
- Retraining and augmenting the workforce to make up for gaps in skills and resources;
- Coordinating business planning during times of great uncertainty.

Although manufacturers face such considerable obstacles, there are technological solutions available today that can strengthen a company's resilience and agility. One of the best suited technologies to help address these challenges in the current business climate are digital assistants – the new name for AI-powered chatbots (Figure 1). This technology can be implemented rapidly to make an immediate impact on a manufacturer's business productivity through automation of redundant, lower value business processes, freeing up their limited workforce talent to address the higher value activities that require deeper analysis and provide employees with more intellectually engaging work. Manufacturers can also address shortages in the availability of skilled labor by using this unique, intelligent tool to enable a more capable and efficient workforce. This is achieved by augmenting their employees' current skill sets with training on complex processes and real-time assistance for multi-step tasks delivered through this personalized advanced technology. Digital assistants have moved beyond the simpler chatbots of days past to highly capable and scalable tools that leverage AI to offer capabilities far beyond what was once imaginable. Customers and employees, in both B2B and B2C contexts, can significantly increase their levels of productivity and engagement with digital assistants integrated with backend applications like Human Capital Management(HCM), Customer Experience(CX), Enterprise Resource Planning(ERP) and Supply Chain Management(SCM).

Figure 1. Digital Assistants can help manufacturers navigate disruptions and challenging business environments

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Oracle Digital Assistant (ODA)

Digital assistants are voice and text-based conversational interfaces that use natural language conversations to assist users in completing tasks. While this definition is a start, it doesn't fully reflect the capabilities and power of the Oracle Digital Assistant (ODA). Oracle's chatbot is an AI-powered platform with features including:

- Natural language processing to support multi-language text and voice interactions, allowing users to interact with backend applications and databases;

- Integration with a variety of popular channels and devices, such as web, mobile, Microsoft Teams, Facebook Messenger, Amazon Echo or Google Home, allowing customers to decide how and where they want to implement their chatbots;

- A rapidly growing list of prebuilt, AI-trained digital assistant "skills" for Oracle business applications (including ERP, HCM, CX and others) and a low code development platform, enabling faster time-to-capability for businesses;

- A resource that is available 24/7, requires no app to download nor new interfaces to learn, giving immediate responses to users.

The ODA platform coordinates multiple, single purpose chatbots, referred to as "skills," to access, extend and enhance backend applications (Figure 2). Within one conversation flow, users can easily switch between tasks involving different backend systems without restarting the chat session as the bot understands conversational context and user intents. Prebuilt skills continue to be released by Oracle for its application portfolio as well as by partners and 3rd parties allowing customers to choose relevant skills for their digital assistant. Furthermore, customers can extend these skills or create their own custom skills, which is accessible to non-developers through its low code development platform. With such abilities to quickly switch between tasks and develop custom skills, without the need for a coding expert, manufacturers can customize this technology to their business' specific requirements, thereby increasing the speed and agility of their employees to manage their day-to-day activities.
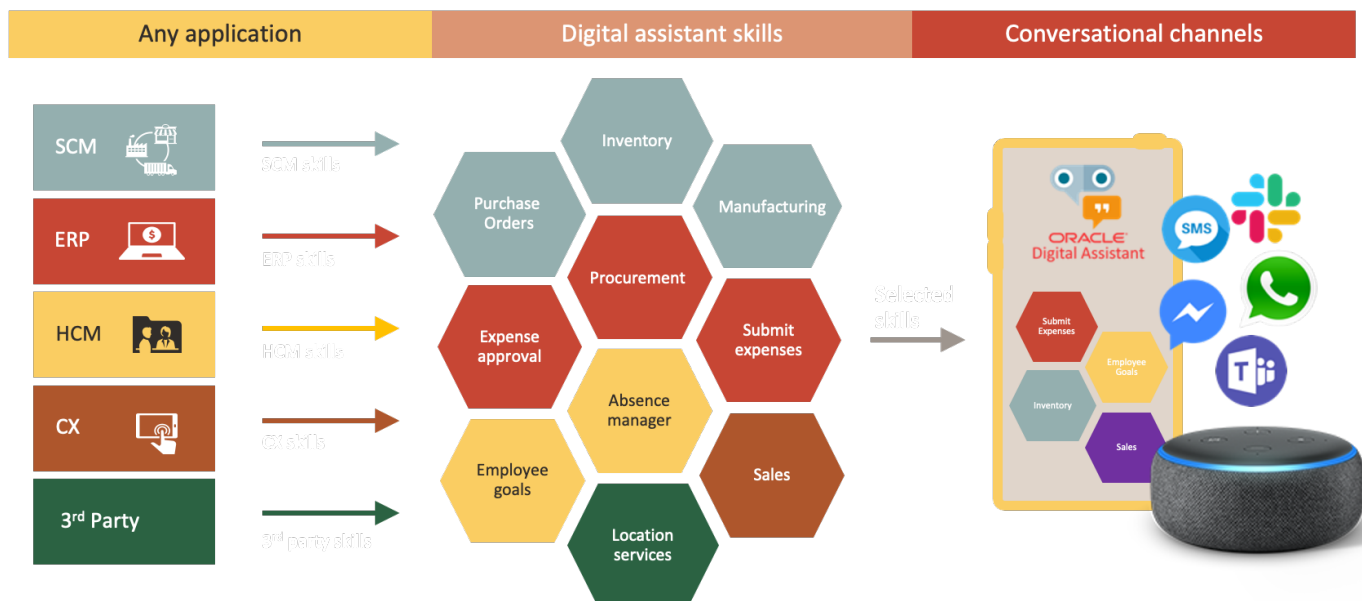

Figure 2. Oracle Digital Assistant extends backend applications, coordinates multiple skills and can integrate into several different channels

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There are several newer digital assistant capabilities that enable manufacturers to better automate a wide range of business processes addressing the needs of different departments, from HR to procurement. The latest digital assistants can support (Figure 3):

- Rich inputs and outputs (including images, signatures, lists, barcodes, and charts)
- Domain-specific vocabulary and deep semantic parsing to allow for complex industry conversations
- Bot-initiated actions and alerts to stay on top of tasks, especially useful for those processes where every second counts
- Additional advanced features including knowledge base search and answer, live agent handoff, complex policy automation and process execution such as transactions and scheduling

Multi-Lingual Language Service
Deep learning for Text classification, NER, Sentiment, OOD Key phrase, multi-lingual

Speech Service
Automatic speech recognition for streaming and transcription, multi-lingual and custom models

Data Manufacturing
Tools and process for "crowd sourcing" high quality training data from within your organisination

Unified Deep Learning Stack
Hybrid GPU / CPU, Train & Serve, Multi tenant OCI Native shared model, caching and fault tolerant with multi version model support

ORACLE® Digital Assistant

Dialog Service
User Interaction layer to facilitate dialogs and execute queries with low code dialog designer

Multi Channel Messaging
Integration with multiple channels like Messenger, WhatsApp, Twilio (SMS) Siri, Alexa, Slack, MSFT Teams, Zoom, Web Chat SDK, Mobile Chat SDK, IVR Group chat in MS Teams, Slack

Skills & Skill Store
Pre- built chatbot skills trained to domain specific use cases and a store to search and consume skills

Insights
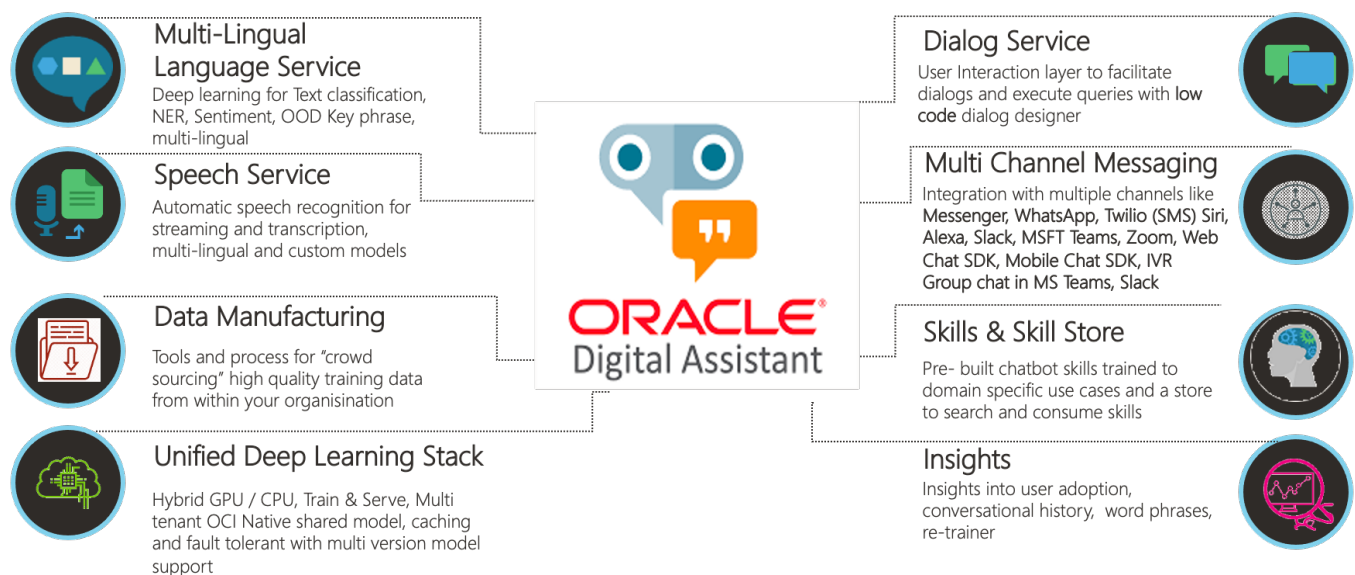Insights into user adoption, conversational history, word phrases, re-trainer

Figure 3. Latest Oracle Digital Assistant capabilities

These differentiated capabilities, delivered through the orchestration of skills on the ODA platform, equip manufacturers with a dynamic set of tools that can elevate their performance expeditiously with tangible efficiency and cost benefits for all stakeholders.

Use Cases for Manufacturing

Sales, Marketing and Service

As manufacturers bolster their operations to improve their resilience and agility, digital assistants have applications to transform every aspect of their business to help achieve these goals. Digital assistants can help automate a wide range of marketing, sales and customer support processes. Manufacturers have traditionally relied on high touch point marketing, sales and service with customers who expect anytime, anywhere engagement. Delivering these types of experiences have become increasingly challenging and require manufacturers to implement new, low touch approaches to keep their operational expenses under control. Digital assistants can facilitate such marketing and sales functions including: lead scoring, push campaigns, personalized marketing, CPQ and CRM tasks. In terms of service, customer self-service and remote service, they can help address an increase in the number of inquiries by customers and improve customer satisfaction without overwhelming the manufacturer's service and technical reps, allowing them to focus on more impactful projects and increasing their work satisfaction as the digital assistant handles the more routine tasks.

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One such example is Bajaj Electricals, a consumer electrical equipment manufacturer with ~1,000 distributors and over 400,000 retail outlets, utilized Oracle's digital assistant technology to allow customers to report a problem with an appliance, request a demo, or schedule an appointment with a technician for installation (Figure 4). This led to a reduction in call center volume, reduced costs and improved customer experience. The automation and conversational nature of digital assistants allowed Bajaj to engage customers in a way that feels high touch while consuming less employee time.

Figure 4. Digital assistants can assist with field service by giving technicians quick access to activity-related information from a backend system and scheduling appointments to customer sites
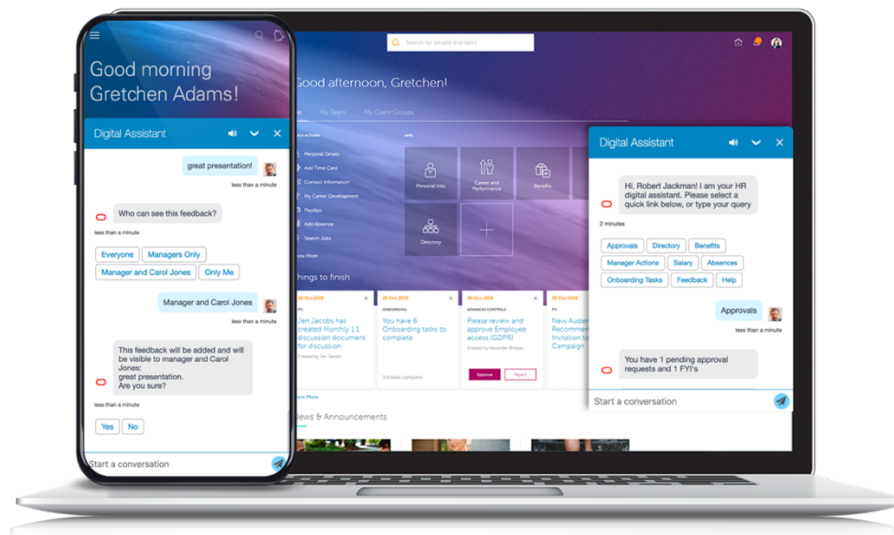
Figure 5. Digital assistants empower employees by simplifying HCM and ERP to perform cross-functional activities and transactions

Human Resources

The current shift to remote working environments and new workplace rules limiting the number of employees at facilities due to COVID-19 have created an opportunity for digital assistants to assist manufacturers in managing and informing employees. Manufacturers have seen the importance of change management as IT, ERP and HCM have needed to adapt to this new normal. For those employees working remotely, digital assistant can help with tasks like onboarding, training, IT helpdesk, procurement, expenses, project management, and payroll (Figure 5).

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For example, Honeywell, a U.S.-based, multinational conglomerate with over 100,000 employees, used ODA to provide a wide range of capabilities to support their sizeable workforce including employee self-service, manager self-service, and HR help support (integrated with a third party search and CRM) to reduce operating costs around employee enablement and training needs. For those essential employees entering a more restrictive workplace due to COVID-19 protocols, digital assistants can ensure that everyone is up to date on safety regulations and provide them with the support they need to address any questions or concerns.

Talent Management

Not only are digital assistants useful in creating a more self-sufficient workforce, but they can also be used to augment and retrain talent to become a more flexible workforce as employees take on their day-to-day duties. Whether it's a shortage of qualified talent in the job market, restrictions on the number of employees that can work in the same proximity or new processes that require new skill sets, manufacturers are increasingly finding themselves trying to uphold high performance standards under additional labor constraints. Digital assistants can assist employees, whether on the factory floor, at a client site or a desk, through activities such as guiding them through step-by-step instructions on how to execute complex tasks, providing live status updates on machinery, querying inventory data or finding technical answers as they resolve maintenance issues.

For instance, IFFCO (Indian Farmers Fertilizer Cooperative), the world's largest cooperative fertilizer manufacturer with 36,000-member cooperatives supporting over 50 million farmers, utilized ODA's voice, multilingual support and mobile capabilities to increase productivity and accessibility to back-end IT systems. These farmers, who use a range of different languages, can quickly access inventory, sales, financial and human resources information by speaking to the voice-enabled digital assistant on their mobile devices.

For those employees requiring training on new job functions, digital assistants can supplement workforce development initiatives by providing the educational resources these employees need at a personal level to become reskilled in new specialties. The need for retraining is further accelerated as digital assistants are used to automate the tedious, lower value business processes, which then allow employees to spend more time developing advanced skills needed for higher value tasks, increasing both employee proficiency and satisfaction. Additionally, as fewer employees enter work facilities under new safety regulations, employers are looking to fill workforce gaps in skills and resources. Digital assistants can play a pivotal role in filling these gaps and supporting a more capable and efficient workforce to meet performance expectations.

Enterprise Resource Planning

Digital assistants are also useful to improve business planning, especially during uncertain times, when so many known and unknown variables can make it difficult to manage. They can be used to quickly access financial or operational data, retrieve results from planning simulations done by machine learning in a backend application, assign planning tasks to team members and report the status and results of completed tasks. These improvements enable manufacturers to increase productivity and agility with enhanced business decision making capabilities.

For example, SRF Limited, a chemical manufacturing conglomerate with 6,500 employees and 15 manufacturing plants, used ODA as a key decision-making tool for management. By interfacing with their ERP system and several other backend applications, their digital assistants delivered real-time business insights and reports to their executives. The self-service nature of digital assistants helped SRF management quickly get important business data in the hands of the right people allowing them to make more timely business decisions.

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Transform Your Business with Oracle Digital Assistant

While there are many steps and options for manufacturers to choose from during their digital transformation, digital assistants offer a strong return on investment due to their scalability, speed and flexibility to build across different business functions. Leveraging out-of-the-box skills, AI capabilities and low code development, customers have implemented ODA in a matter of days. With the ability to extend and customize skills, ODA can be made to suit the needs of the users and updated easily as those needs change.

With applications of this technology across lines of business and its ability to allow employees to easily work cross functionally, accessing different backend systems within the same conversational interface, manufacturers can receive many impactful benefits. These include strengthening their employees' proficiency during changing business conditions and providing improved, safer work conditions to help retain these highly skilled workers. Through self-service and automation capabilities, manufacturers can lower their operational costs as digital assistants address tasks without requiring human assistance. This has the additional benefit of increasing employee engagement as they can focus on more involved projects, while the digital assistant handles the more repetitive tasks. Digital assistants can empower a manufacturer's workforce to perform beyond what they would be able to do alone, which has and will continue to prove critical in the most challenging business environments.

To learn more about the power of digital assistants for your company, please visit oracle.com/chatbots

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