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AI in ITSM

Automate your IT to deliver great experience

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Executive Summary

Today's CIOs, CEOs have started Artificial Intelligence(AI) pilot experiments in their organizations. Service desk handles different types of routine and non-routine tasks on a day to day basis. Gartner reports that IT organizations spend 66 percent of their resources on day-to-day operations, in "keeping the lights on" activities. End users who are millennials and Gen Z demand better experience. Artificial Intelligence, AI technologies leverage the power of data to draw predictions and automate processes to meet customers' expectations.

Driverless cars, virtual assistants and robots are one among us today which are powered by AI technologies such as Natural Language Processing (NLP), Machine Learning (ML) or voice assistants. These technologies are no longer a hype but a reality today in many businesses. AI is a long-term investment which takes time and resource to plan, execute and realize benefits. 2018 would be the year when businesses create new roles and investment in AI and analytics. According to Gartner, "By 2020, the average person will have more conversations with bots than with their spouse."

While AI & ML have already set their footprints in e-commerce, automobile and other industries, IT has just started embracing these trends. IT Service Management (ITSM) has a huge potential to benefit from AI as service desk agents perform a variety of transactional tasks. But, it is important to understand the basics of AI, impact of AI adoption and do some groundwork before implementing.. AI helps IT to meet the growing expectations of users in terms of faster service and latest technology. Digitalization drives AI to leverage data and accelerates business performance.
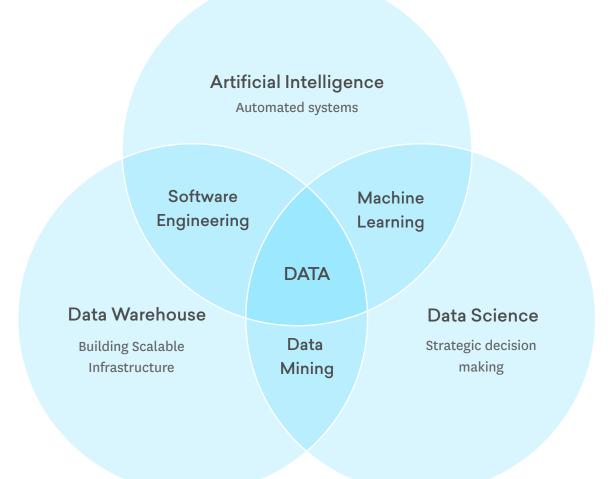
AI is not alone

AI is the science of making intelligent machines. It automates processes by drawing patterns from data and predicting solutions. This improves accuracy and delivers speedy, consistent resolution to end users. AI includes a mix of different technologies such as Natural Language Processing(NLP), Machine Learning (ML) and virtual agents.

The 3 Pillars of AI

NLP - Natural language refers to the way humans communicate with each other. It is the interaction of intelligent systems using a natural language. Example - English.

NLP - Machine learning is a field of science that learns from data patterns and make recommendations or decisions.

Virtual agents for self service - Digital assistants provide solutions drawn out of data models and previous history. This also drives self-service and consistent user experience.

Preparing for AI revolution

> **"**
>
> *Gartner says Global IT Spending will reach USD 3.7 trillion in 2018.*

Now, the real question is how to face this AI wave and the groundwork needed before implementing AI solutions in ITSM. Let us now discuss how to eliminate some of the common inhibitors and be prepared to handle this transformation.

Eliminating inhibitors

- ✅ Lack of Education
- ✅ Inconsistent data management
- ✅ Shadow IT
- ✅ Improper Change management

Lack of Education

Education and awareness are crucial while kicking off new technology investments. Since AI is still not fully mature, ambiguity exists among IT stakeholders especially service desk agents. Lack of proper education leads to failure of adoption. Proper communication and education to IT admins and agents about AI advantages would improve the outlook of AI. Initially, everyone in the organization might be reluctant about this new technology due to fear of losing jobs but it is important to overcome this resistance through proper education. Educate the differences between these different technologies such as AI and ML and their potential benefits.

> 💡 *Tip - Start demoing AI & how it can reduce routine tasks of agents.*

Inconsistent data management

Data-driven insights accelerate business decisions. Data is key in building an effective AI ecosystem as AI & ML technologies rely heavily on past and present data to draw predictions. They learn from the volume of big data and draw analysis based on patterns. Companies have both structured and unstructured data which are not completely utilized. Data accuracy directly influences prediction of results. More the quality of data, better the accuracy. AI & ML technologies perform data modelling to arrive at the solution.

> 💡 *Tip - Classify, store and manage data for every process.*

Shadow IT

Bring Your Own Device (BYOD) and cloud applications increase the possibility of shadow IT. Employees and siloed departments tend to use independent apps in order to get things done faster. This might improve their productivity but using unauthorized apps in workplace increases security risk. IT has no records of these data and therefore, this is an inhibitor for technologies such as AI or ML while analyzing historical data. Eliminating Shadow IT enables holistic IT approach and effective functioning of technology implementations.

> *Let IT be the single point of contact for any technology implementation*
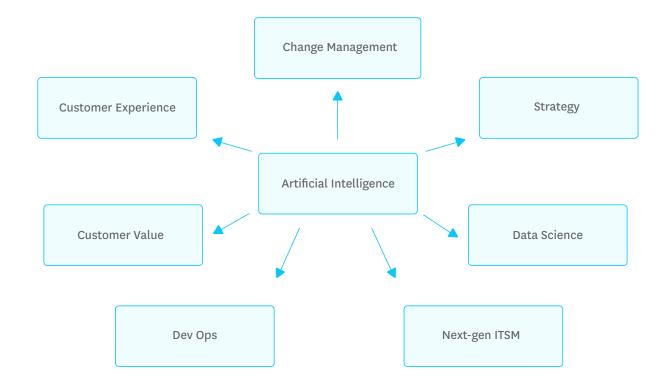
Improper Change management

Handling cultural change, ethical dilemma and resistance from agents are crucial while implementing AI for ITSM. Planning a proper change management is key. Agents and end users need to be trained on AI enabled solutions and their potential benefits. It is significant to highlight that AI technologies will not replace humans whereas they will complement human agents improving overall efficiency. It's the responsibility of management to communicate the purpose of AI and remove this aversion from agents. Trust building and proper change management help in better adoption.

> *Tip - Pilot AI experiment with few agent groups*

Accelerators

According to IDC, Artificial Intelligence and Machine Learning spending is expected to grow rapidly from less than $8 billion in 2016 to $47 billion by 2020. Let us discuss the various drivers of AI in ITSM.

- ✅ **Enterprise Service Management**
- ✅ **Knowledge management**
- ✅ **Digital transformation**
- ✅ **Agile frameworks**
- ✅ **Self-service culture**

Enterprise Service Management

Employees prefer one stop portal to access any service and AI & ML deliver better results in the centralized set up. AI has to be an enterprise-wide initiative with a huge volume of data available across all functions. Enterprise wide service management involves data collection and analysis. This drives big data implementation to derive meaningful inferences. This leads to better customer success management, data-driven decisions and analytics.

Knowledge management

A repository of FAQs and solutions is crucial in building an effective knowledge management. Knowledge base acts as a source for big data analysis and AI. Business intelligence is an result of effective knowledge management. Identifying new solution articles to add to knowledge base and suggesting the relevant article to end users are some of the common use cases.

> " *Through 2020, 99% of AI initiatives in ITSM will fail, due to the lack of an established KM foundation." from new Predicts 2018: IT Operations on Gartner*

Digital transformation

Digital initiatives drive AI innovation in most organizations. Digital transformation leverages technology innovation to drive business growth and efficiency. This exercise starts with reviewing current legacy applications and optimizing them for improved efficiency. DX strategy has to be an enterprise-wide initiative and not restricted to IT alone. Applying AI technologies such as chatbots, virtual agents to improve customer interaction are common examples.

> *40% of digital transformation initiatives will be supported by Machine Learning and Artificial Intelligence by 2019." - IDC*

Agile frameworks

Agility is important to any business to grow faster. Business applications, processes and models have to be flexible in terms of customization and set up. AI technology implementations demand data mining and data availability. Service management uses agile framework to speed up development process and time to market.

Self-service culture

Develop a self-service culture by marketing your service desk accessible from anywhere. End users demand immediate response and resolution through self-service. Therefore, chatbots and virtual agents improve response rate and deliver a consistent user experience. Tier I queries can be deflected using these technologies which saves time and resource for agents.

Checklist

- ✅ Create an AI Learning & Development center to develop awareness, educate stakeholders about AI&ML technologies and to enforce cross-departmental collaboration among IT, business and data analysts.

- ✅ Build a modern analytics culture for proper data collection, storage and analysis. Data warehouse forms the basis for AI innovation. Facilitate relevant support systems including technology capabilities, resource planning and governance. Convert data into insights for better decision making.

- ✅ Implement an unified digital enterprise with integrated solution that acts as a single source of truth and enables AI-powered analytics and automation.
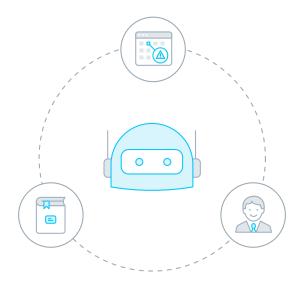
AI use cases in ITSM

AI can be implemented in ITIL modules such as incident management, service request management, change management etc. to automate routine activities. Before implementing these use cases, it is recommended to understand the inhibitors and drivers of AI as mentioned above. AI technologies interact mainly with three actors such as

- AI & Agents
- AI & End users
- AI & Management

AI & Agents

Agents are often loaded with routine tasks such as ticket assignment, firefighting etc. AI enabled technologies boost productivity and let agents resolve complex Tier II, Tier III issues by automating these routine activities.

Knowledge management

AI powered knowledge management provides solution from the repository if available or searches the cloud to suggest a relevant solution. Besides this, it creates new articles if not available already and provides smart suggestions for IT agents while providing resolution. Deep learning technology is used in knowledge management for solution recommendations to agents and end users.

Sentimental analysis

User satisfaction and experience have become one of the key metrics in measuring service desk success. Predicting end users' sentiment at the time of raising tickets depending on the usage of words and previous CSAT survey results help agents to respond appropriately and improve CSAT. ITSM trends involving AI and ML play a major role in this to be proactive.

Predictive maintenance

ITSM solutions integrate with other business applications such as monitoring tools, facilities management etc. Service desk powered by AI & ML create tickets automatically on its own if a particular infrastructure goes down or something deteriorates. It also informs the relevant users who might be affected and create a problem ticket for root cause analysis.
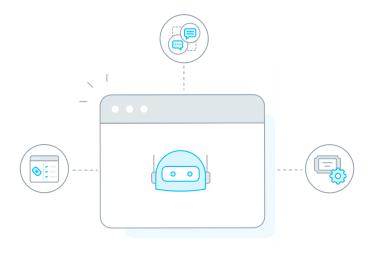
Proactive Change management

Change Management minimizes risk and impact. Machine Learning, ML gauges the potential risk and prompts Change Manager to execute the back out plan. ML also helps during change evaluation and planning to schedule the change request appropriately.

Asset management

Asset lifecycle and performance can be effectively monitored by AI powered technologies. If an asset's performance deteriorates, ML identifies this based on previous trend and notifies Asset Manager to replace the respective asset. It places an automatic service request to replace the particular asset.

AI & End user

Personalized conversation

Chatbots and virtual agents ensure real-time, consistent and personalized interactions with end users increasing customer satisfaction levels. Chatbots enable consistency in terms of language, response time and availability. However, it does not replace human agents as they are involved in solving complex Tier II and Tier III queries.

Classification of incident vs service request

End users often get confused with the difference between an incident and service request. AI technology identifies the ticket type based on its past learnings and classifies them for the service desk agents. This eliminates the routine task of ticket classification performed by the agents.

Auto resolution of tickets

AI powered technologies respond to end users' queries with real time solutions without any human intervention. They search knowledge base for solutions. If not available, they suggest solutions from cloud and create new articles that can be stored in the repository.

Service Item Auto-approval

When end users place any service request, Machine learning checks for the service item availability and approves automatically without any human intervention. Approval is handled based on the priority, past history and impact of the requested item.

AI & management

Strategic decision making

Predictive analytics analyzes past results and forecasts future projections including revenue, customer satisfaction and resource planning. This helps management to make informed decisions through budget forecast and expense management. It also provides insights on agent and service desk performance.

Predict SLA/contract violations

Based on the previous trends, any future SLA violation can be identified and notified. This is done depending on the ticket volume, seasonal work load, infrastructure failure and resource issue. Contractual agreement is maintained as well as customer issues are resolved on time.

Workload optimization

Service desk agents spend most of their time in ticket classification and assignment. AI technologies take care of identifying the right group and right agent. It also suggests the management on staff hiring based on the workload and future resource planning.

AI Readiness Assessment

The following matrix assesses your organization's AI readiness based on four criteria such as culture & management buy-in, technology capabilities, process capabilities and resource capabilities.

Stage	Management buy-in & Culture	Technology capabilities	Process capabilities	Resource capabilities
Technology enthusiasts	✅	✅	✅	✅
Visionaries	✅	✅	❌	✅
Pragmatists	✅	❌	❌	❌
Conservatives	❌	❌	✅	❌
Laggards	❌	❌	❌	❌

AI in ITSM Benefits

Significant cost reduction

Effective knowledge management deflects L1 and L2 tickets. This allows human agents to focus more on complex projects, thus saving time and resource.

Consistent end-user experience

Interaction with service desk becomes consistent for end users with the help of chatbots and virtual agents which deliver seamless service experience.

Faster ticket resolution

These technologies enable agents with the right resources, sometimes handling tickets by themselves which result in the reduction of average resolution time.

Continuous availability and agility

Chatbots and virtual agents ensure 24/7 availability to answer end user queries on behalf of human agents.

Insights-driven decision making

Data can be converted into insights and this can be consumed by the management to take meaningful business decisions.
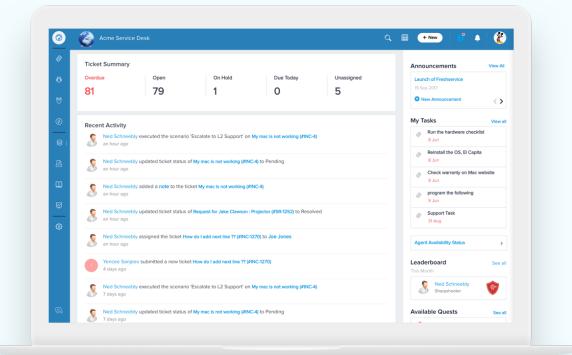
Proactive ITSM

AI & ML helps businesses to be proactive in identifying potential incidents and deflecting trivial issues improving customer satisfaction

About Freshservice

Freshservice is a cloud-based IT service desk and IT service management (ITSM) solution that is quick to setup and easy to use and manage. Freshservice leverages ITIL best practices to enable IT organiations to focus on what's most important - exceptional service delivery and customers satisfaction. With its powerfully simple UI, Freshservice can be easily configured to support your unique business requirements and integrated with other critical business and IT systems. Are you trying to keep up with the current ITSM trends? Freshservice is on a constant mission to innovate and deliver great experience.

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