



**BHADALE GROUP OF COMPANIES
- IT AND REAL ESTATE**



April 18 2018

Azure AI Services Catalogue-detailed

Bhadale IT Developers Pvt. Ltd CIN: TBD | Bhadale Real Estate Developers Pvt. Ltd CIN: TBD

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Bhadale Group of Companies

Bhadale Group of Companies consists of Bhadale IT Developers Pvt. Ltd and Bhadale Real Estate Developers Pvt. Ltd.

1. **Bhadale IT Developers Pvt. Ltd** is an IT and Computer Engineering company

This company provides consultation in areas of cutting edge technologies, research outsourcing, and software consultation related to data center and related engineering practices

2. **Bhadale Real Estate Developers Pvt. Ltd** is a Real estate company

This company provides development of commercial, residential and farm based developments. It manages the renting and lease of the real estate properties

Bhadale Group of Companies has aggressive programs in place to serve the niche market. Below are the programs and service offerings for **IT Division**

Bhadale IT Developers Pvt. Ltd Programs and Services

IT Division programs – specific to Microsoft Azure technologies

- 1 Cloud Architecture- Azure Cloud
- 2 AI – Azure AI and ML
- 3 Digital – Azure Digital Enterprise platforms
- 4 Automation - Azure automation
- 5 R&D services- Azure research areas
- 6 Engineering services – Azure engineering board reviews, audit, diagrams, approvals
- 7 Data center services – Azure datacenter setup
- 8 Outsourcing – Outsource your Azure jobs like remote help, tutor

There are various services offered under each program, details are described below

IT Division program related services

Cloud Architecture – Microsoft Azure specific

- Cloud Enterprise Architecture – Azure Enterprise platform / frameworks, & processes
- Cloud Business Architecture – Azure business tools, & frameworks
- Cloud Information / Website data Architecture – Azure webapps/ mobile apps, Bing maps, & Sharepoint website design
- Cloud Solution Architecture – Azure Solutions as per your needs
- Data center Virtualization and Cloud services (IaaS) – Hyper-V, Containers, Desktop/ Network, & Storage virtualizations
- Cloud Technical Architecture – Project specific – Best practices , design patterns based on MSDN
- Cloud ERP Solutions (SaaS, PaaS) – Office365, CRM, ERP packages , & integration
- Cloud Strategy and Transformation – Workshops, roadmaps and strategy
- Cloud Systems Integration and consolidation – Salesforce, Google, SAP, MS CRM , & LOB systems
- Cloud Project Management – Agile, TFS, Scrum templates, & PMP based techniques

- Cloud Pre sales support - Assist in design of material for presales deals, bid documents, & client meetings
- Business Needs (RFI/RFQ/RFP assistance)- Documents with Azure and alliances specific details for inventory, pricing, RoI, & Management
- Cloud Quality Initiatives – SLA, OLA, performance, cost optimizations, Corporate standards, ethics, & values
- Cloud Business Analysis – Analysis as per BABOK and MSFT/ partner tools for BA
- Cloud Infrastructure Planning – hardware , network, storage , backup (IaaS, PaaS)- Datacenter IT systems design, provisioning, commissioning and planning for future growth
- Cloud business portfolio assessment services (workshops) – Assess, enrich and support your portfolio of services as related to Azure and allied technologies

AI Azure

- Artificial intelligence and advanced machine learning - Azure AI Compute, Data science, Azure ML , Cognitive intelligence, AI Infra, AI tools and AI Services platform , & Deep Learning
- Intelligent applications, Intelligent things - Azure AI for IoT , & DataLakes
- Conversational systems – BOT Framework
- Mesh app and service architecture – Azure Service bus, Azure Service fabric, Micro-services, Smart grid, Gateways, & Enterprise Integration
- Adaptive security architecture- Deep Learning and predictive analysis, forecasting using tools, & algos.

Digital –Azure

- Virtual reality and augmented reality: VR, AR and Mixed reality(MR) from Microsoft; Hololens for MR; VR headset, VR ready PCs, Unity SDK, & VR SDK
- Digital twins – Azure IoT , MSFT Cognitive platform, Big compute, Analytics, Mixed reality & related SDK
- Blockchains and distributed ledgers – Azure hosting, SQL/No SQL DB, Security, Bitcoin mining, serverless computing, BizTalk services, Business partner exchange, Integration with Accounting ERPs, I/O remittances, claims settlements, & AI based fraud detections.
- Digital technology platforms – Azure private/ public, hybrid clouds, Solutions, Cloud best practices, Ready to use base VM and Containers as per domain, business and industry needs

Automation - Azure

- Robotic Process Automation – Blue Prism intelligent automation powered by Azure AI
- IoT - Azure SaaS for IoT(IoT Central), IoT Edge, IoT Services, Windows 10 IoT, & SDK for Raspberry PI
- Manufacturing robots - IoT solutions for Manufacturing robots
- BPO call center robots – Runbooks based VM solutions for BPO domain for backoffice automation, AI based chatbots for CRM, RPA for form filling, taking orders, notifications, & help desk automation etc
- Chatbots –AI based chat bots with SDK, interfaces to CRM, Cloud, industry / domain specific interfacing with expert systems to offer clients better results, good search, filtering and rollups of results, & use of hadoop for unstructured content like voice
- Remote workers - Azure IoT hub, IoT Edge integration, wireless communications, control using mixed reality to accomplish the remote task, AI and ML to correct any errors and fatigue related omissions.
- Hazardous jobs robots(Mine bombs, nuclear waste, underwater, space etc) - Uses same technologies as remote worker, however will have rugged parts, fit for jobs in odd places like nuclear plants, fire, underwater, collapsed buildings and where humans dare to risk their life.

R&D services – Azure based

- PHD mentor, buddy - for thesis support projects using Azure technology
- BPO - Outsourced work in areas of research areas related to IT and Computer Engineering - mainly for offloading research work related to azure for cost effective valued added- returns

Engineering services (Only Engg) – for Azure solutions

- Engineering services for Data centers – Datacenter layouts based on business and Azure needs, Server engineering, cable layouts, rack provisioning, power cables, routing boards, patch panes, fans, motherboard systems engineering, failover mechanisms, fire, plant safety, fire exits, & backup power / UPS
- Engineering services for IT Departments - Private cloud installation needs of premise, IT equipments, hardware-software interfaces, admin consoles, emergency management, IT failure management, quality certification, hardware level security, OS hardening, network firewalls, & premise management
- Engineering architectures, drawings, road ways, town house planning, parking, safety, outdoor maintenance, lighting etc - Datacenter external environment , landscaping, parking, restrooms, food court, licenses, audits, & approvals
- All other aspects of engineering: Civil, electrical, water and sewage, safety and mechanical motors, pumps, refrigeration, cooling – Civil bylaws, Electrical quality and proper metrics, levels, HVAC, waste water management, safety, workers laws, factory bylaws, corporate laws, fencing, & legality support

Data center services (Engg + IT) – for Azure

- Data center Engineering services – Same as above
- Data Center IT Services - IT software licenses for Azure OS, Windows, devices, SDK / tools, laptops, & server boxes
- Data center Security services – as per Microsoft recommendations, SDLC, threats, AI for preventive measures
- Data Center QA services- Certifications for datacenter like ISO, Green, & Energy saver
- Datacenter Cloud services – Provisioning of tenants for internal / external service offerings, SLA, OLA, metering, white labeling , custom domains, SSL, & cross- datacenter connectivity
- Datacenter compliances services- mainly related to audit, certification, & maturity management
- Data center based business solutions – assisting clients get loans, offer great service and obtain RoI in less time using various management and business techniques

Outsourcing

- Insourcing – Helping clients in in-sourcing of off-shored Azure operations and business units
- Outsourcing – help clients to reduce internal load and offloading to low cost centers
- Near sourcing – helps clients to gain max profit and benefits of other types of resourcing
- Cloud sourcing – Remote work done
- BPO services – using help desk, RPA, & Chatbot based automation
- IT specific services - Any client specific IT services as per request
- Engineering specific services – Offshored engineering works like drawing, layout planning, & security
- Training specific services – being part of your partner team, help clients to offer our services to their local clients

IT Division programs – AI Azure – Azure services catalogue

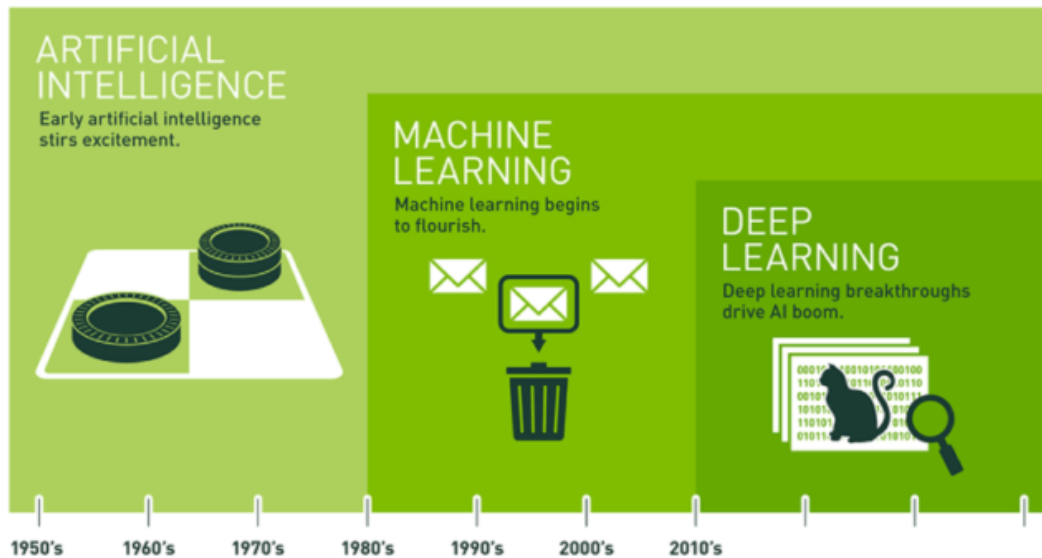


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CATALOG OF IT SERVICES OFFERED - extension of generic cloud offerings adapted to Azure

AI services (general services can be availed from other programs like Cloud to enable matured solutions)

Service No	Service Name	Services offered
1	Artificial intelligence and advanced machine learning -	<p>Azure AI Compute, Data science, Azure ML, Cognitive intelligence, AI Infra, AI tools and AI Services platform , & Deep Learning</p> <p>Elicitation of AI project requirements and the business need, the value add to the company, our suitable services offerings will be leveraged based on nature of scope, time and details.</p> <p>Scoping of work - break down at project level, modules, developer roles, work/time/budget estimates, ETL, Open source tools leveraged like Apache spark, Revolution R Enterprise, Hadoop, Docker, Kubernetes, TensorFlow, On-premise, Edge, Cloud computing models, real-time streaming, batch processing, selection of algorithms. Selection of Azure products like Azure ML server, work estimates related to layout, tasks, configuration, container services, deployment targets IoT, mobiles, AI agents, upgrade models/ scripts, sandbox testing.</p> <p>Mapping and fitment of the product features, work requirements as solution offerings. Defining the solution components and logical modules, AI interfaces, HMI, desired results, parameter feeds, types of AI / ML algorithms recommended that will deliver the desired results. Identifying the Azure cloud/ ML components from the Azure offerings/ Azure stack, location of the AI agents/ society,</p>

		<p>deployment/ upgrades modes for the AI components, admin and API interfaces to the sub components.</p> <p>NLP, ML (Supervised & Unsupervised) and Deep learning using Neural Network projects are tasked for enterprise needs using the Common framework/ services given below, along with unique project tools of the products like:</p> <ul style="list-style-type: none"> • Azure Machine Learning Workbench • Azure Machine Learning Experimentation Service • Azure Machine Learning Model Management Service • Microsoft Machine Learning Libraries for Apache Spark (MMLSpark Library) • Visual Studio Code Tools for AI <p>Code development for custom algorithms/ Python of the various deep learning architectures such as deep neural networks, convolutional deep neural networks, deep belief networks and recurrent neural networks that are applied to fields including computer vision, automatic speech recognition, natural language processing, audio recognition and bioinformatics where they produce results comparable to and in some cases superior to human experts. Use of Microsoft Cognitive Toolkit (CNTK) & Azure Cognitive Services</p> <p>Integrate with relevant solution components, devices prior to testing. Use of REST APIs, Security tokens , calls that interact with GUI interfaces for HMI and scheduled data pull/ push from IoT/ Bigdata interfaces, data lakes, storage devices</p> <p>Testing in a sample , happy / bad scenarios, under critical loads and various parameters that make the algorithms learn and mature to provide desired outcomes like predictions, classifications, clustering and able to generate MIS reports/ plots using libraries</p> <p>Delivery of production – ready AI solution kits/ modules/ projects that client can adapt / integrate in their local premise/ cloud.</p>
2	Intelligent applications, Intelligent things -	<p>Azure AI for IoT , Intelligent Azure apps, storage, analytics, NLP , Chatbots, Autonomous vehicles, Emergency responders</p> <p>These are based on AI and ML and AI aware applications are developed based on the available platforms using Microsoft Cognitive Toolkit (CNTK) & Azure Cognitive Services, our Common framework/ services, that adhere to international standards like IEC 61850, ISO, NIST , GE, Cisco, Ericsson, Smart Grid, Intelligent monitory, Low power IoT , Big data field computing, Cloud computing, Newer Protocol like ZigBee. Azure cognitive services for human like intelligence, bots and virtual assistants can be developed. Azure services like Data Lake Analytics, Stream Analytics, Intelligent Data Factory can be leveraged</p> <p>Development of Intelligent society of AI agents that live, work and report like humans which are Ambient intelligent agents. The society can have mutants and</p>

		<p>based on genetic algorithms that cross-breed, new DNAs and combinations can be developed that ensures the common goals are achieved using competitive scales</p> <p>Azure IoT, IoT Suite, IoT Edge/ gateways can be made intelligent by way of overlaying the “things” with AI agents that can detect anomalies, abnormal situations and can take autonomous decisions in the absence of humans</p> <p>Prototypes for AI –enabled enterprises for specific project, enterprise program, Technical platform and utility, smart home, smart factory etc</p>
3	Conversational systems	<p>Azure BOT Framework, chatbots, virtual assistant, voice activated/ voice command systems for commercial and in-vehicle, in-home systems</p> <p>These are based on AI and ML and AI aware systems are developed based on the available platforms using Microsoft Cognitive Toolkit (CNTK) & Azure Cognitive Services, our Common framework/ services given below for man-machine conversations (real and live voice/ speech recognitions), machine-machine conversations-M2M mainly based on IoT offline chatting/ near live for fog computing, adhering to specific domain based taxonomy and ontology / dictionaries. Ex. Simple ones - Banking Teller machine, Petrol vending robot, Help desk robot; Complex ones- Robo Cops, reservation systems, Interactive car guidance.</p> <p>Use of standard API to integrate single/multi modal interfaces for the specific project, robo unit, assembly line or enterprise unit that will be able to be livelier by getting the conversational part embedded. Standards used are, ISO 26262, ISO 15504 (Automotive SPICE), and IEC 61508. Azure LUIS, NLP, Cognitive algorithms for voice, vision, gesture systems for robots and related instrumentation and control design of the automation frameworks. Suitable transformation/ responses of voice to Natural language, body movements, gestures is possible by use of 4,6, way movement body parts, hydraulics, stepper motors, DSP encoders/ decoders & activator switches in co-ordination with gyros, accelerometers, ambient sensors and all that is needed to design a great robotic system</p> <p>Integration / interfaces to Apple’s Siri, MS Cortana , GE, & similar Google products</p>
4	Mesh app and service architecture –	<p>Azure Service bus, Azure Service fabric, Micro-services, Smart grid, Gateways, & Enterprise Integration, Azure IoT, NIST, Federal and provincial regulations, data privacy and central / peer administrators.</p> <p>These are based on AI /ML and AI aware systems are developed based on the available platforms using Microsoft Wired/Wireless, IoT, Industry frameworks, our Common framework. Design of solutions that link, mobile apps, web apps, desktop apps and IoT apps – and their data, whether user or operational – into a broad mesh of back-end services to create what users view as the “Application.” MASA</p>

		<p>designs are means faster, collaborative, cloud-based technology.</p> <p>Use of REST APIs, Micro services, Pylm(Python based), HW/SW/NW interfaces to connect the Mesh of the IoT enabled devices that interact, connect and exchange information to ensure the mesh is actively engaged in serving it front end consumers. Services will be more abstract than the SOA, REST, SOAP or even Service bus based. Containers and their managers hosted in a distributed smart grid topology in-campus or across regions are mainly providing an integrated view in the cloud which has virtualized layers, aggregators, facades, Internet gateways, PoP, edge peering, EGRIP and overlay networks that make the virtual environment possible to the last mile end clients</p> <p>Testing of sample prototypes with scaled down versions, full versions and production scale automated, manual inspections is available.</p>
5	Adaptive security architecture-	<p>Deep Learning and predictive analysis, forecasting using tools, & algos. Leverage Azure Security Centre, Systems Operations, Error logging, Intrusion detectors and data center quality tests/ certifications</p> <p>These are based on AI and ML and AI aware systems are developed based on the available platforms using our Common framework/ services given below. The adaptive security management architecture (ASMA) topology consists of real to near to real time active AI agents that scan and find historical bugs, traces and passive and active threats and intrusions. The agents use predictive analytics to interpolate and forecast the possible threats based on early history. The framework works and ensures the internal integrity and known bugs, worms and avoids large scale casualties. They also act proactively on finding patterns/anomalies of data related activities based on files, emails, traffic, and fingerprinting of the resources by hackers</p> <p>Security being a top priority, the secure layers/ services will have the highest priority and these also have to pass through the internal ID, security features prior to making any changes that are logged for audit purpose. Hardware level security features, OS level security features, Apps level security features all will be monitored and any types of zero day attacks, IP spoofing, port scanning and any sort of external threats are monitored, logged and analyzed by our algorithms. Suitable parallel processing features, scanning scope, work breakdowns are auto done; results within several minutes rather than days will be provided for cloud scale peta-byte size scanning. Deltas and recent changes are taken up first.</p> <p>The Info sec base will be guided by ITIL, CEH, CISSP domains and the AI interfaces will integrate and interact with various security enabled data layers like DMZ, OS Security rings and hardware security. Any compromising, suspicious activities will first be tackled and later logging and emailing follows.</p>

		<p>Adaptive Security will be more flexible in dealing with new and threats from unknown/new sources that target loop holes in newer technology protocols. There will be clear and unbiased database of hacks from internal hacker and there will be continuous feedback to the DEEP Learning AI Agents that will learn, adapt and be war ready to threats not know to external world.</p> <p>Our unique knowledge and experience can help keeping the risks to a minimum.</p>
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For more information, please contact us.

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