

Exceedingly SAAS Consulting Expectation for Streamline Business



SAAS Consulting Practice

Your Trusted Partner

Cognitive Convergence

<http://www.cognitiveconvergence.com>

About Us

Cognitive Convergence is Subject Matter Expert in Office 365, Dynamics 365, SharePoint, Project Server, SAAS, Power Platform: Power Apps-Power BI-Power Automate-Power Virtual Agents, Artificial Intelligence and Machine Learning practices.

Our Core services regarding SAAS Consulting Practice include following:

- ✓ High-Quality scalable multi-tenancy architecture Software development consultation
- ✓ More customization flexibility as per users' commitments and needs
- ✓ Plan and implement Business Model and SaaS application roadmap
- ✓ Third-party Integration with a lot of ERP/CRM and other SAAS services
- ✓ UI/UX Design and Digital customer experience (CX) strategy & insights
- ✓ SAAS B2B, B2C, and B2B2C solutions and tech startups initiative with robust, smart, secure and scalable solutions
- ✓ Focus on customers and understanding their business objectives and provide consulting, technology services
- ✓ Our SAAS consulting practice heavily follow compliance standards.
 - ✓ HIPAA - Protecting medical/health information
 - ✓ SOC 2 – Trust
 - ✓ ISO 27001 – Information security management
 - ✓ ISO 27018 - Protection of personally identifiable information
 - ✓ PCI DSS, 23 NYCCRR 500, FFIEC – financial industry
 - ✓ ISO 22301 – Business continuity



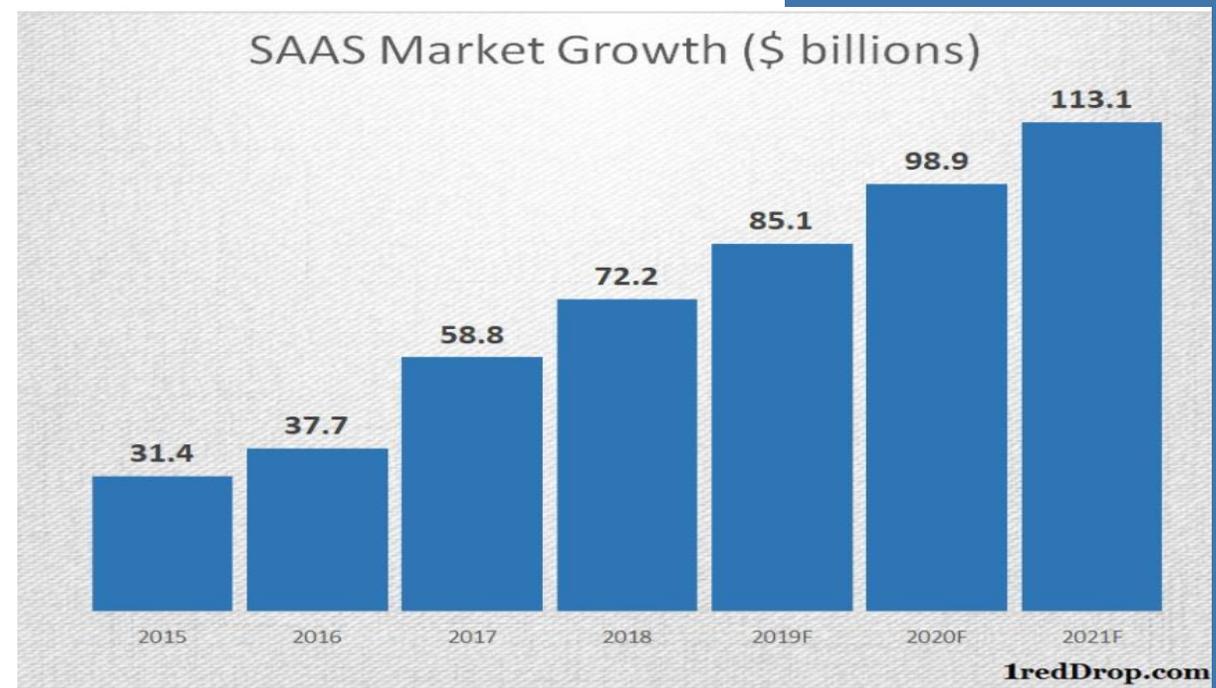
Current Location: Lahore, Pakistan

Planned Front-end Office: California/Washington States- USA

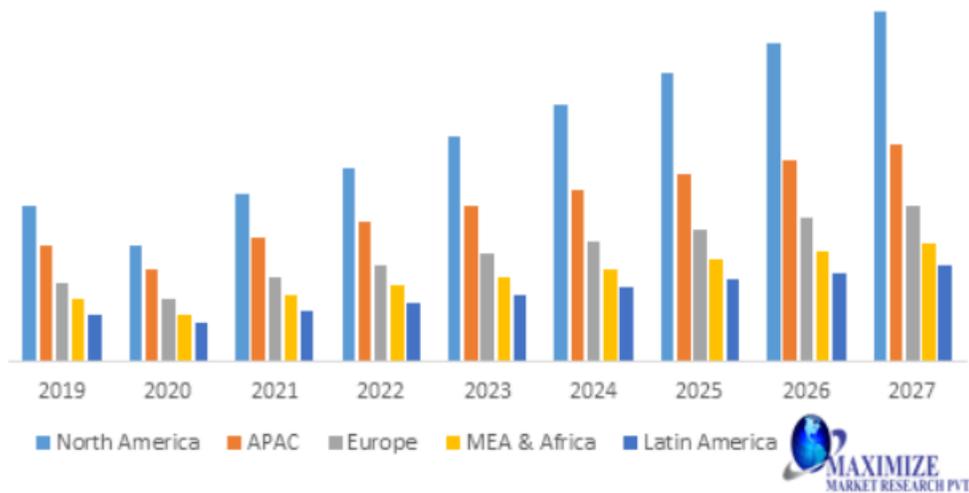
Market Potential

The global software consulting market is predicted to grow at a CAGR exceeding 11.8% from 2018 to 2025.

Source: 1RedDrop, <https://1reddrop.com/>



Global Software as a Service Market by Region

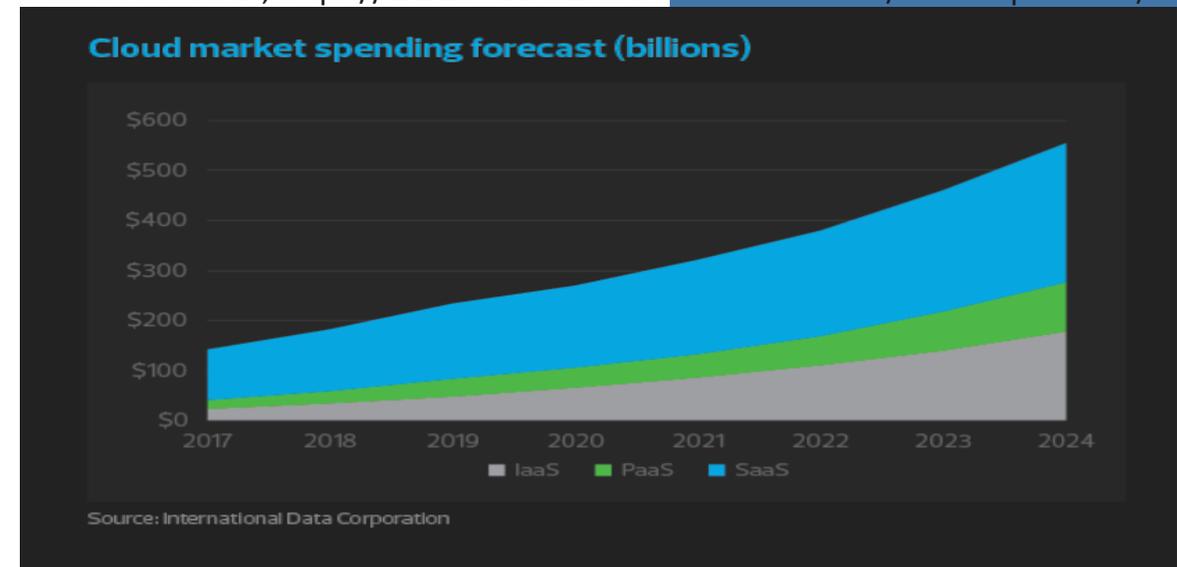


Global Software as a service market was valued at USD 148.03B in 2019 and is expected to reach at USD 369.41B by 2027 at a CAGR of 12.11% over forecast period 2020-2027.

Source: Maximize Market Research, <https://www.maximizemarketresearch.com/market-potential/>

Global trend towards digitized business operations is increasing swiftly. The global software consulting market is predicted to **grow at a CAGR exceeding 11.8%** from 2018 to 2025.

Source: International Data Corporation <https://www.idc.com/>



SAAS Consulting Service

- ✓ A software licensing and delivery model in which software is licensed on a subscription basis and is centrally hosted
- ✓ Instead of installing and maintaining software, simply access it via the Internet, free from complex software and hardware management

Our Offerings

We help our clients in the following way:

- ✓ **Consulting service:** With the help of our consultancy, we help businesses or tech startups to convert their ideas of SAAS into worthwhile products. By using our advanced technology knowledge and expertise we elaborate on to work on a SaaS (Software-as-a-Service) model for automating critical business processes.
- ✓ **SAAS management services:** To ensure solution/product/application meets expected performance and reliable responsiveness, we constantly monitor cloud ecosystem to manage their services.
- ✓ **Cloud architecture design:** Whether public, private, or hybrid, we help clients to select a suitable platform to run their SAAS application.



Why Choose Us?



Over 20+ years of experience and being a trusted Microsoft Partner, we have worked with several clients from diverse industry. Our core strategy is to:

- ✓ Offer a line-of-business services to organizations and business of all sizes
- ✓ Offer more consumer-oriented services to provide best guidance/solution
- ✓ Focus on model of engagement for varying business models
- ✓ For SAAS applications a proven process of UI design, long-term support, subscriptions management, software development, and marketing.
- ✓ Support for multi-tenant or multi-instance features as needed.
- ✓ Multiple levels of testing procedures for Every release before going to the live environment.
- ✓ Offer Usability testing & validation



Your benefit:

- ✓ Ease to upgrade on scalable technology
- ✓ Support for multi-tenant or multi-instance features as per need.
- ✓ Use special programming language and database platform.
- ✓ Depending on the expected thresholds we offer cost considerations performance.
- ✓ For big data technologies we provide native support.
- ✓ Disaster recovery
- ✓ Easy integration, reliable features with uncompromised security and fully managed services
- ✓ Integrate APIs for different types of software solutions by offering our expertise in a wide variety of third-party APIs.



SaaS Development Life Cycle

✓ Ensures the continuous delivery of the product and efficient implementation

✓ Phases of SaaS development life cycle

- ✓ Envisioning
- ✓ Platform evaluation
- ✓ Planning
- ✓ Subscription model
- ✓ Developing
- ✓ Operations

SaaS Development tools

SaaS software obtains the complex architecture that is delivered by means of different frameworks, libraries and SaaS developer tools

Server-Side Technologies

- ✓ Choose among RoR, NodeJS, .NET, Java, PHP, etc.
- ✓ All these programming languages have their own benefits to be applied

SaaS Development tools

Front-end technologies

- ✓ Angular, React, Vue.js are known for the distinctive functionality to deliver excellent UI/UX designs

Cloud platforms for hosting and maintenance

- ✓ Majority of SaaS companies use third party providers for the hosting of their products
- ✓ On-premise hosting would be extremely expensive
- ✓ Cloud platforms like Azure, Google Cloud, AWS, Heroku and others offer a wide choice in terms of hardware, supporting software, and DevOps tools.



SaaS Architecture

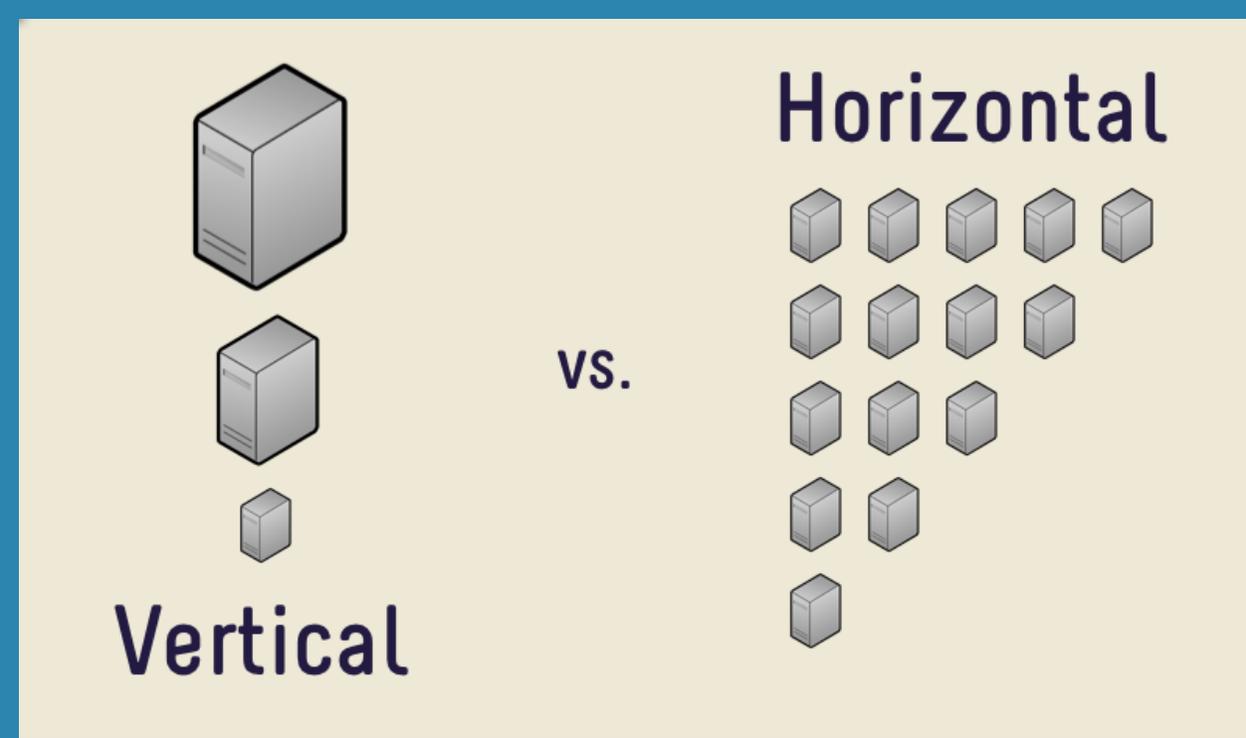
There are two main varieties of SaaS:

Vertical SaaS: Software which answers the needs of a specific industry (e.g., software for the healthcare, agriculture, real estate, finance industries)

Horizontal SaaS: Products which focus on a software category (marketing, sales, developer tools, HR) but are industry agnostic.

Design Considerations for SaaS

- ✓ **Scalability**
 - ✓ SaaS architecture should be able to scale and accommodate hundreds, if not thousands of users simultaneously accessing it over the web
 - ✓ Use Network Load Balancers to evenly distribute incoming traffic across multiple web servers
 - ✓ Introduce separation of concerns by having individual layers to handle data access, business logic, and the presentation layers of application
- ✓ **Zero downtime and Service Level Agreements**
 - ✓ Users typically expect the product to be available almost all the time and with no interruption to service
 - ✓ Strategize how to factor upgrades, patches, or debugging and troubleshooting production issues into SaaS applications architecture
- ✓ **Multi-tenancy**
 - ✓ The product needs to be able to accommodate multiple users whilst at the same time, ensuring user data, privacy
 - ✓ SaaS product must support multi-tenancy



Capabilities of SaaS Solution

SaaS solutions can offer any type of service that can be developed as a software application which include:

- ✓ Office applications
- ✓ Email and instant messaging
- ✓ Social media
- ✓ Exposing 3rd Party APIs
- ✓ Security and authentication
- ✓ Machine Learning
- ✓ Artificial intelligence
- ✓ Location Services
- ✓ Data streaming and lookup services



Key Features and Benefits of a SaaS Platform

Deploying a SaaS-based product can bring:

Simplicity

- ✓ Typically accessed over the web through various types of devices
- ✓ Advancements in client-side programming languages have resulted in more intuitive web interfaces
- ✓ Make using applications delivered over the internet as easy to use as their desktop counterparts

Economical

- ✓ Subscript fee payment model makes it easier for businesses to budget
- ✓ Couple this with zero infrastructure setup costs

Security

- ✓ No need to concern with how data is being locked down.
- ✓ It's held securely in the cloud

Compatibility

- ✓ Subscribers can simply log-on to already upgraded services
- ✓ No versioning discrepancies between team members of workforce which avoids compatibility issues

Scalability

- ✓ Handle both vertical (limited by the size of the server) and horizontal scaling (building the logical unit that works on different hardware and software)



Disadvantages of SaaS Platform

There are some disadvantages rolling out a SaaS platform:

Lack of Control

- ✓ SaaS applications are hosted in the vendor's SaaS environment
- ✓ Have little to no control over the using software
- ✓ Windows-based application might have more configuration options than a regular web application

Limited ecosystem

- ✓ SaaS is a growing trend as a software distribution channel
- ✓ Still many applications that don't offer a hosted version

Performance

- ✓ An in-house, thick client or on-premise application will always run quicker than a product being delivered over the internet

Data concerns

- ✓ Each jurisdiction has its own legislative policies and acts when sensitive data is being processed or stored



SAAS Development

Developing SaaS Product

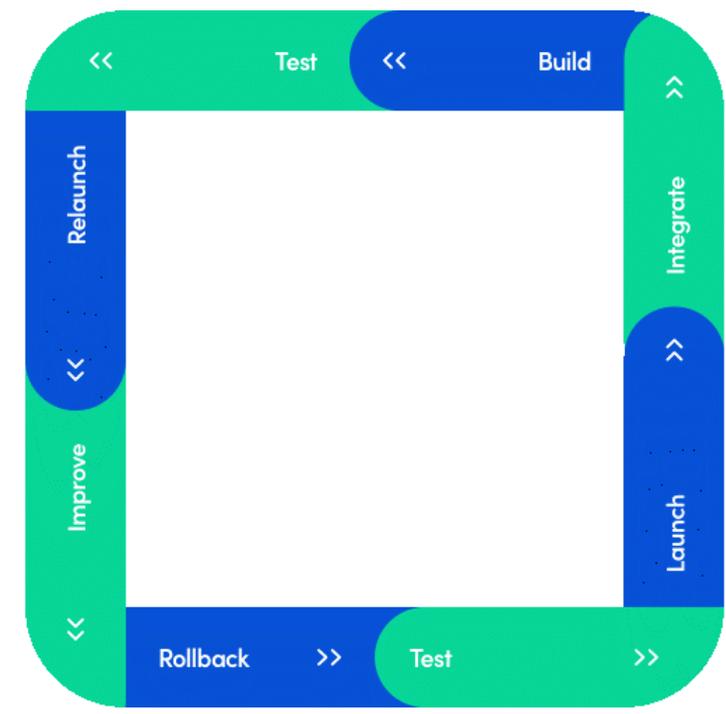
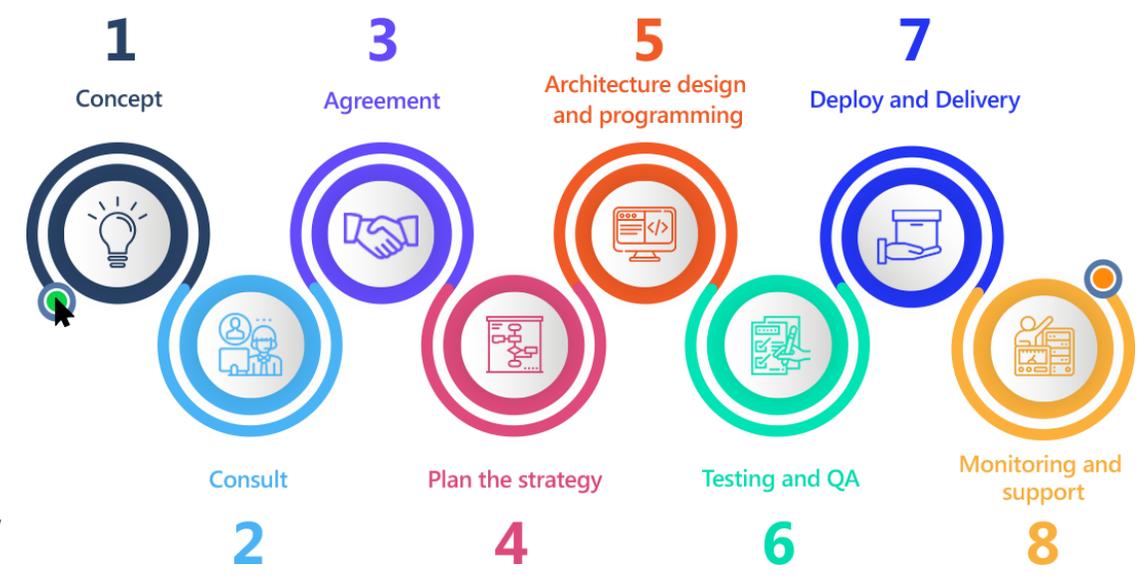
Following important details on how to develop a SAAS application, will help to implement the idea into a valuable market product:

- ✓ Define a unique value proposition that will help the SaaS stand out
- ✓ Design the customer acquisition process
- ✓ Design multi-tenancy with performance and security in mind
- ✓ Choose technology stack
- ✓ Choose pricing strategy
- ✓ Launch, test and improve

Challenges of SAAS Development

With every development come challenges. There are a few most frequent problems in SAAS application development:

- ✓ Lack of trust from customers
- ✓ Small target audience
- ✓ Poor idea



Asp.Net vs Node.js

To avoid mistakes, CTOs and tech consultants need to consider dozens of factors and compare multiple options.

Asp.Net

- ✓ An open-source web application framework built by Microsoft and based on C#
- ✓ Offers a wide range of web forms MVC, HTML5, JavaScript, CSS, Templates & many more to create highly-functional and dynamic websites and web apps

Pros

- ✓ Offers customization in the data storage to easily distinguish identity information storage and security information
- ✓ Ensures better safety and security
- ✓ Affordable and highly-competent framework

Cons

- ✓ Initial compilation consumes ample of time
- ✓ Tedious and daunting to upgrade older apps of the ASP.NET framework
- ✓ Third-party integration is tricky

Node.js

- ✓ A JavaScript runtime environment that allows developers to execute JS code on the server-side
- ✓ An open-source platform and helps in the formation of real-time web applications

Pros

- ✓ Single-threaded and consists of power to cater to the demands of multiple core servers instantly
- ✓ Backed up by an active and vibrant community of developers across the globe
- ✓ Packaging modules are extensive and various new modules are released every month

Cons

- ✓ Due to its asynchronous nature, the massive number of developers find it challenging to grasp and implement
- ✓ Doesn't consist of a robust library, so developers are forced to integrate third-party libraries into their applications
- ✓ For one who doesn't clear basic concepts in Java faces a lot of issues in Node.js development

Basis of Comparison	Node.js	ASP.NET
Definition	Open-source, cross-platform JS runtime environment that runs JS code on server-side.	Open-source web app framework built by Microsoft.
First Release	It was launched in 2009.	It was released back in 2002.
Latest Release	Its latest version is 14.0.0 released on April 23,2020.	Its recent version is 4.8, released back in April 2019.
Primary Language	JavaScript	C#
Processing Model	Asynchronous, Single-thread non-blocking, I/O model	Synchronous, multi-threaded, blocking I/O
Leading firms using these languages in their projects	NASA, Walmart, eBay, Uber	AccuWeather, Dell, Stack overflow

SAAS Databases

Designing the database for SaaS web application, following factors are considered, not necessarily ranked according to importance:

- ✓ Scalability of the proposed model
- ✓ Cost of implementing the database design
- ✓ Complexity of managing and customizing the database
- ✓ Data isolation, or the impact of a tenant's workload on the application's overall performance



Database models that can be used for SaaS application in terms of these factors.

- ✓ **Model 1:** Separate Application and Database Instances for Each Tenant
- ✓ **Model 2:** Multi-Tenant App with One Database per Tenant
- ✓ **Model 3:** Multi-Tenant App with a Single Multi-Tenant Database
- ✓ **Model 4:** Multi-Tenant App with Shared Multi-Tenant Databases



Database models

Factor/Model	Model 1: Separate Application and Database Instances Per Tenant	Model 2: Multi- Tenant App with One Database per Tenant	Model 3: Multi- Tenant App with a Single Multi- Tenant Database	Model 4: Multi- Tenant App with Sharded Multi- Tenant Databases
Scalability	Medium	High	Medium	Very High
Cost	High	High	Low	Medium
Complexity of development and management	Low development, medium to high management	Low development, low to medium management	Low development, low to medium management	Medium
Data Isolation	Very High	Very High	Low	Low

AI / ML Cloud Model

Artificial Intelligence as a Service (AlaaS)

- ✓ AlaaS allows individuals and companies to experiment with AI for various business purposes and sample multiple platforms before making a commitment
- ✓ Cloud makes it easy for enterprises to experiment with machine learning capabilities and scale up as projects go into production and demand increases
- ✓ Hardware, software and staffing costs for AI can be expensive, many vendors are including AI components in their standard offerings or providing access to artificial intelligence as a service (AlaaS) platform



Machine learning as a service (MLaaS)

- ✓ An umbrella definition of various cloud-based platforms that cover most infrastructure issues such as data pre-processing, model training, and model evaluation
- ✓ Amazon Machine Learning services, Azure Machine Learning, Google Cloud AI, and IBM Watson are four leading cloud MLaaS services



AI/ML Tools for Cloud

The main offerings in this category involves the following:

Categories	Amazon	Microsoft Azure	Google
Image Recognition	Rekognition Image	Computer Vision API Custom Vision Service Face API Emotion API Content Moderator	Vision API AutoML Vision
Video Analysis	Rekognition Video	Computer Vision API Video Indexer Content Moderator	Video Intelligence
Speech to Text	Transcribe	Bing Speech API Custom Speech Service Speaker Recognition API	Speech API
Text to Speech	Polly	Bing Speech API	Text-to-Speech API
Translation	Translate	Translator Text API	Translation API
Language Analysis	Comprehend	Text Analytics API Content Moderator Language Understanding Web Language Model API Linguistic Analysis API	Natural Language API
Chatbot	Lex	Azure Bot Service	Dialogflow

SaaS API Architecture

Following are the key elements of a successful API strategy:

API-first design approach

- ✓ Provides a simple framework that enforces better REST API design practices, helping businesses focus on API resources and messaging before undergoing the heavy lifting and back-end implementation
- ✓ Allows organizations to isolate concerns and to focus on clear
- ✓ Reduces project delays and cost overruns

Choose an API runtime

- ✓ Following are the key capabilities to look for in an API runtime:
- ✓ Hybrid support
- ✓ Scalability, reliability, availability
- ✓ Strong Orchestration

Central service repository is a must

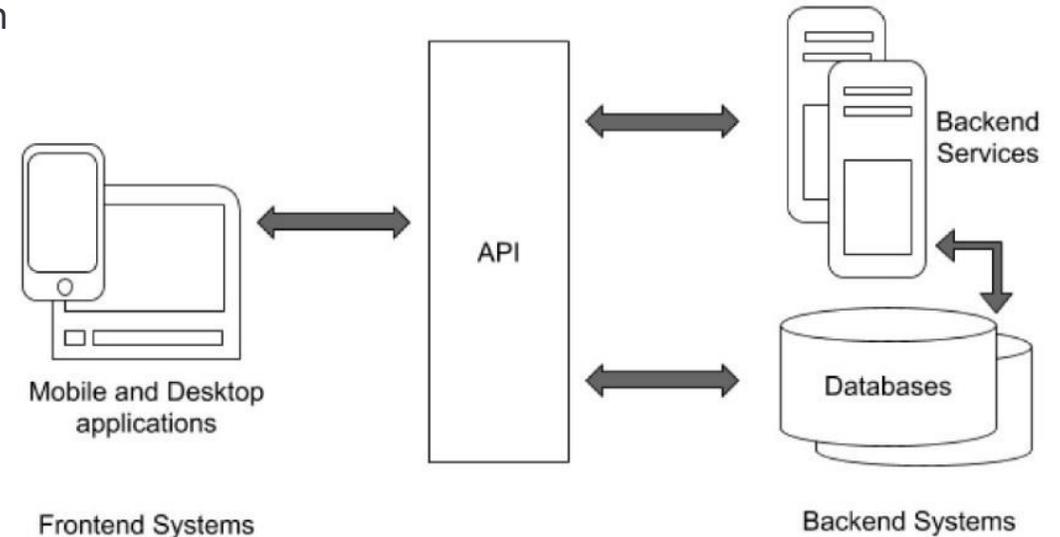
- ✓ Surfacing the API facilitates API discoverability and accessibility by people who need it
- ✓ Makes it easy to categorize and search through services while providing a consolidated view of APIs

Versions, policies, and contracts

- ✓ Helps with API lifecycle management and allows API publishers to assess the impact of retiring a version
- ✓ Crucial to enforcing security and managing SLAs with API consumers

API usage monitoring

- ✓ Businesses can closely monitor API activity and engagement
- ✓ Helps business owners and technical teams better understand their users and ultimately create a better service



SaaS API Architecture

Widening API audience

- ✓ Providing and promoting content helping the API be successful
- ✓ Makes it easy for users to follow the API, download documentation and ask questions

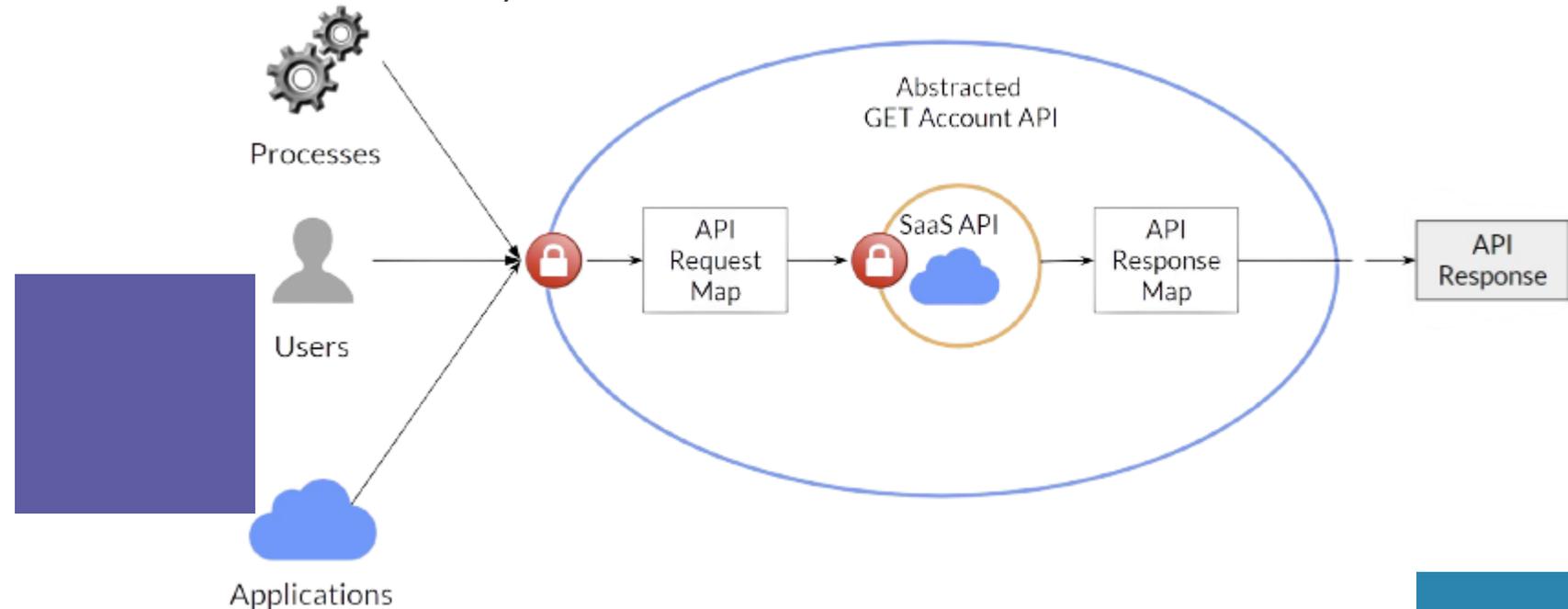
Always improve

- ✓ Allows to optimize API over time to improve consumer experience and productivity.

SaaS Frameworks

Following are some open-source SaaS frameworks with multi-tenancy implementation:

- ✓ ABP
- ✓ SAASKIT
- ✓ FINBUCKLE.MULTITENANT
- ✓ CLOUDSCRIBE



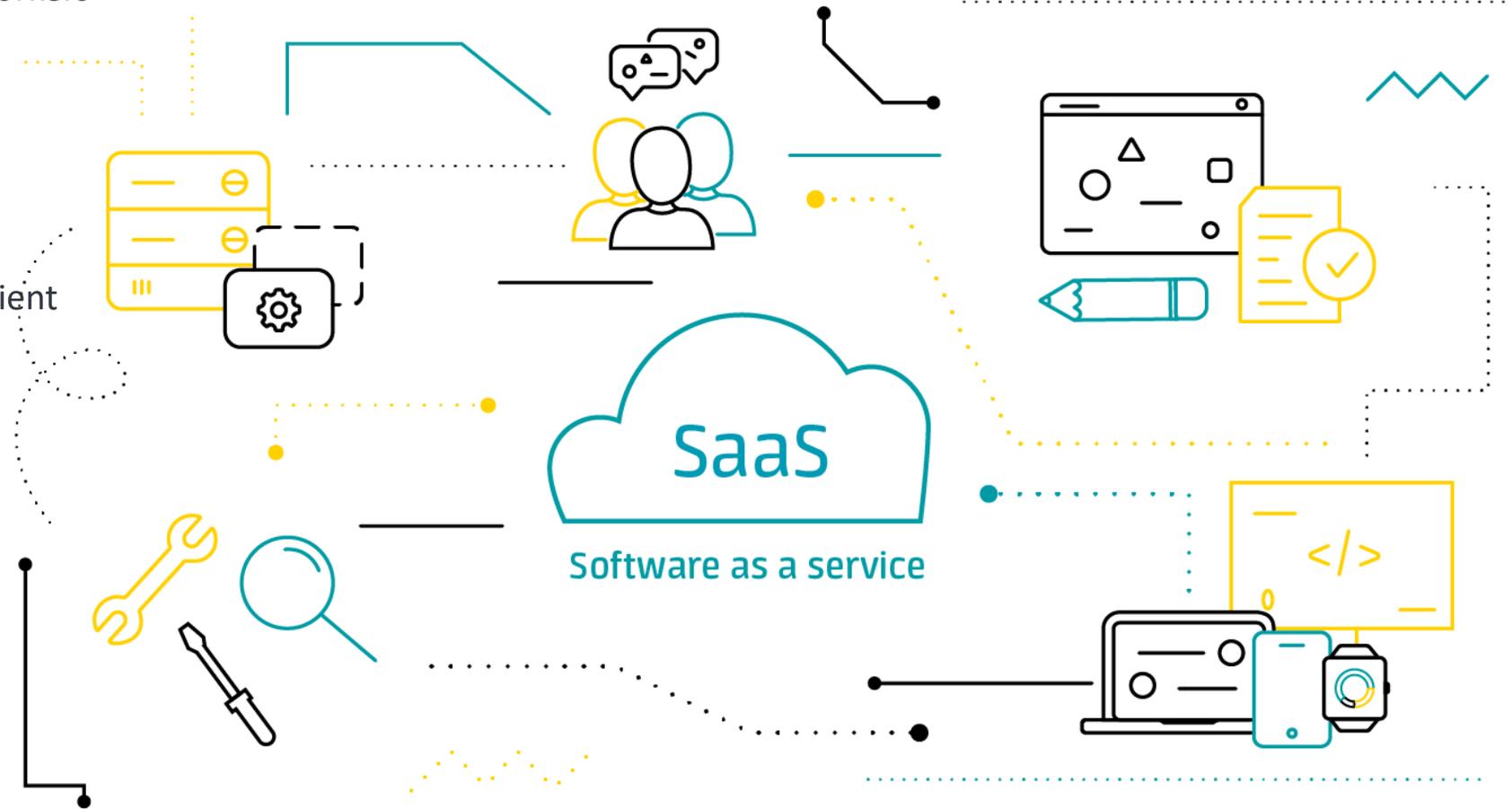
Reference Cognitive Convergence SaaS: EdConvergence (An EdTech Solution)

- ✓ A package of all techniques and tools that accelerates the development of students not only at school but at home as well
- ✓ Connects teachers with students and parents to build progressive classroom communities
- ✓ Develops a positive sign of cooperation between parents and teachers



Reference Cognitive Convergence SaaS: PsycheConvergence (A PsycheTech Solution)

- ✓ Provides a personalized Dashboard for Psychologists, Counselors, Therapists, Psychiatrists, and Social Workers
- ✓ Easily set up new appointments
- ✓ Send an automated text
- ✓ Email as appointment reminders
- ✓ View future appointments against a client
- ✓ Create a profile for new clients
- ✓ Add prospects to a waiting list
- ✓ Create therapy notes
- ✓ Take payments



SAAS consulting services of Cognitive Convergence offers strategic opportunities to clients, investors, and partners that is

- ✓ Unique and industry defining
- ✓ Mutual interest centric business approach
- ✓ Significantly enhance company's footprint
- ✓ Turn grow revenues by entering into new and exciting **Technology Domains, App development ideas, Solution Development, and Joint venture projects**
- ✓ 1st mover advantage with
 - ✓ Talent: 100%
 - ✓ Timing:100%
 - ✓ Technology: 100%
 - ✓ Technique: 100%

Thank You



Shahzad Sarwar



www.cognitiveconvergence.com

For questions or queries, contact us, we will be sure to get back to you as soon as possible.