



White Paper

Synapsis Engine

The engine that creates Business Applications fast
by NousPratIT

NousPratIT

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Abstract

Synopsis Engine. A platform that allows users with minimum programming experience the ability to design and build a business application based on their business requirements, market or industry.

Problem Statement

Anyone currently in business or thinking of building their business eventually will need to create it in a digital environment.

Current technology uses multiple applications from different vendors to complete specific business tasks. A CRM to manage customers, an ERP to manage resources and financial transactions, portals/websites for user friendly access, E-Shops for sales to name only a few.

An international CRM vendor like Salesforce or local vendor like Softone may have a better solution, if the business requires just that. Selecting WordPress to create a website or Magendo for an e-shop are both solutions that are good for the specific application.

In any case it requires employees/partners or external contractors with skills in the technology to use, manage and support these applications. This requires resources and funding, that can easily escalate if the wrong decisions or partnerships are made.

Background

NousPratIT, a software technology vendor that adds value to customers using the Mind (**Nous** in Greek) to make (**Prato** in GR) intelligent **IT** solutions. With individuals that have many years of experience in Software Development, Sales, Business Analysis and Project Management we are creating a solution: Synopsis Engine.

Solution

Synopsis Engine

“The engine that allows nontechnical users create their own business application, based on their business requirements, market or industry.”

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How it works

Synapsis Engine has an interface that is module based. A user will Register, login to Synapsis Engine and create a project.

The user will then select modules from the left menu and add it to their Project.

For example the CRM module to manage your customers, the E-Shop to manage sales, the Marketplace to manage B2B transactions, role based permissions for users, WMS for warehouse management and so on.

After installing the selected modules and running them, Synapsis Engine will build all relationships, databases and schemas into the application.

Alternatively

Synapsis Engine will also come with specific business applications, like templates, that you simply select based on the requirements, market, or industry.

Once you have selected from the templates or created your own business design, you will be able to customize the modules further, add new modules from the palette, remove features that are not required or add more features through the user-friendly Interface.

Currently there are solutions in the market that allow a user with minimum programming experience the ability to utilize the platforms.

However, most of these solutions are suitable for specific functions and cannot cover multiple business activities. Or they can cost a lot of money/resources and not communicate with other applications for lack or difficulty of integration. If they are also open source, this makes them vulnerable to attacks.

Example of a Solution Platform

WordPress is one of the most popular Website creation platforms or Content Management Systems.

It is free to download, install and use, while you may need to pay for certain elements.

It allows a user to select from templates or design their own website, based on their requirements.

Certain knowledge to create the content is required to proceed, while advanced users can also insert additional plugins to enrich the abilities of their website.

Plugins, include an e-shop functionality or basic CRM plugin, however they both require a certain amount of knowledge to utilize them efficiently, are limited to vendor specific terms and require constant monitoring/updating.

Characteristics

Synopsis Engine will be hosted on the Microsoft Azure Ecosystem and will have a range of characteristics such as

- Multilingual, multi-group, multi-company and multi-user.
- Role based authorization with user permissions and feature sets.
- Cross platform integration.
- Mobile friendly
- State of the art security and authentication model.

Technical Characteristics

The technology and architecture that is utilized follows current best practices, to ensure its longevity, security, flexibility and growth.

Hosting Platform: Azure

Microsoft Azure offers a range of benefits such as

- Instant global presence
- High availability through the vast number data centers worldwide
- Scalability of the service ensures you can manage resources with a click of button if you grow quick or need to downsize your business volume
- Disaster recovery and Back up, which are essential to any business
- Security, with encryption of links and data, DDoS protection and integration with existing Active Directory sign on

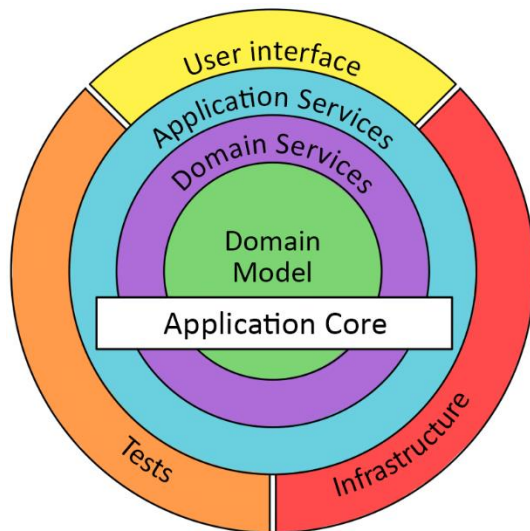
Development Framework: ASP.NET Core with Entity Framework ORM.

With the continuous change and demand in the technology market, Microsoft created ASP.NET Framework to create feature rich websites and high end web applications.

ASP.NET significantly reduces the amount of code required for building large and complex applications which can increase overall development speed and reduce development costs. Just-in-time compilation, smart caching technologies and native optimization dramatically increase overall application performance.

Entity Framework is an Object Relational Mapper (ORM) which is a type of tool that simplifies mapping between objects in your software to the tables and columns of a relational database.

Development Architecture: ONION Architecture (aka Clean Architecture).



Some of the benefits in utilizing ONION architecture include:

- True loose coupling between layers/components
- Limit rewrite necessity over time
- The application becomes very portable
- Business logic has no dependency tentacles
- Architecture is more easily sustained over time
- Infrastructure is free to use any data access library or external web service to do its work
- UI and data access "layers" become much smaller
- Compiler enforces dependencies boundaries

Programming Language: C#

The major advantage of programming in C#, other than being Microsoft's preferred, is that it can be deployed over any operating system including Android, ios, Windows or cloud platform.

Additional advantages are its speed of compilation, the fact that it is simple, Object Oriented, modern, and type safe. It is a very efficient system, has a strong memory back up and a rich class of libraries. Maintenance costs are less because it is safer than other languages, has a familiar syntax, the support of Microsoft and the programming community. Additional technical features make it the most powerful programming language for the .NET Framework.

Development Team

Synapsis Engine is a long-term project and it requires a dedicated developers team that will see it through. The team comprises of the following roles:

- Platform Architects: 1
- Senior Backend Developers: 3
- Senior Frontend Developers: 3
- Senior Database Engineers: 1

Crucial to the success of the project will be

- The support of a Senior Project Manager to monitor and guide the team throughout the Phases.
- NousPratIT management and stakeholders to ensure all necessary resources, including funding and time are available to complete the each phase of the project.

Conclusion

What makes Synapsis Engine by NousPratIT different? The team and their vision of creating an Engine built with the right parts:

1. Architecture
2. Modern Technology
3. Fully Customizable
4. Security
5. Reusability options

By creating an Engine that can build a vertical business application that is fully customizable and ready within $\frac{1}{4}$ of the time it currently requires, NousPratIt will have a serious advantage over the competition.

Phases

Phase 1

Working with customers to create Custom Business applications that require specific modules then adapting these modules into Synapsis Engine. Once we have enough modules implement Phase 2

Phase 2

Combine modules to create a new Business Application, that will require Basic development skills to complete the project. Then we move to Phase 3

Phase 3

Automate the process of creating fully functional Business Applications, so that someone with a good business understanding can create and complete a project.

Phase 4

Create an interface where the user simply describes core business activities, through a series of questions and enters basic information so that Synapsis Engine creates the entire Business Application with no further development. Then the Borg will take over.

References

Microsoft

WordPress

CodeGuru

Quora



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