



FOUNTECH.
SOLUTIONS

A Fountech.ai company

THE FUTURE OF AI IN YOUR HANDS

METHODOLOGY

Prepared by the
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Methodology

OVERVIEW

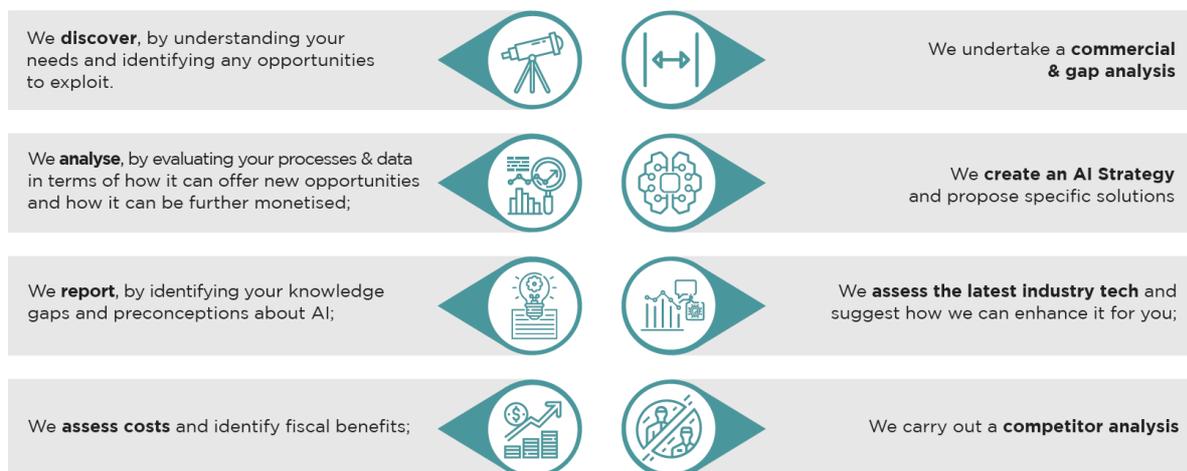
Our methodology almost always divides any project's work process into the below key phases:

1. **Proof of Value** – Our AI Proof of Value (AI-POV) or 'Whitepaper' sets out to better understand our client's organisation, the opportunity or issue being addressed and defines the most suitable technical options to progress.
2. **Grant Applications** – Where required, we will assist clients to identify grants, perhaps local and / or international, which they may be able to apply for, and we can also assist in the application process itself.
3. **Interface Design** - On completion of the POV, we will fully understand what the intended nature of the completed solution should look like, so mock-ups of the solution's interface are an essential part of the process.
4. **Yellow Paper** – A 'blueprint' document exhaustively detailing the solution, which will be strictly followed in the development phase.
5. **Proofs of Concept** – Developing modules to validate and test the algorithms created during the yellow paper phase, before we finalize the yellow paper itself.
6. **Patent Applications** – Preparing the information and diagrams required by patent attorneys to file patent applications to protect your intellectual property, which we will develop.
7. **API Development** – The development process is itself broken down into further sub-phases, which are described in greater detail further below.
8. **After-Sales Support** – A support service of a negotiated period will be available after the release of Version 1.0. of your AI solution. The service aims to help you integrate your AI into your company and support your operational needs.

Should you have any more questions about our methodology, please contact ai@fountech.solutions or a Fountech Solutions representative.

PROOF OF VALUE

The POV examines the feasibility and potential profitability of using AI to identify opportunities and address challenges. We propose an AI strategy and recommend specific solutions.



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GRANT APPLICATIONS

Once we have completed the preparation of the white paper, we can assist in identifying opportunities for third party funding. This includes looking at local granting bodies (e.g. UK and US granting bodies) and, also, international granting bodies (e.g. European grants). The process entails:

- Identification of grants applicable to the envisaged technology,
- Detailing the specifications and requirements of each grant,
- Completing the application process on behalf of the client

Usually, grant applications involve a scientific / technical component that explains, in broad outlines, what the applicant is trying to accomplish and how it will be achieved. In many cases, the applications need to be accompanied with a business proposal. We have expertise in both these areas, so we can help with a strong application, maximising the chance of success. We also appreciate that the client is an expert in their relative field, so we consult with them every step of the way.

INTERFACE DESIGN

On completion of the POV, we will fully understand what the intended nature of the completed solution should look like, so mock-ups of the solution's interface are an essential part of the process.

Mock-ups will detail:

- **Behaviour** – Expected handling, on a case by case basis.
- **User Experience** – How the user interacts with the solution.
- **Functionality** – What tools and features are to be made available.
- **Interface** – The product's design, look and feel.

Fountech Solutions prefers to design mock-ups of solutions and have clients agree to them before we invest any significant time in further development. Mock-ups provide the best way of customers being able to provide us with feedback and suggest ways that users can interact with any final products.

The feedback process is quite straightforward; multiple drafts of a design may be produced until a final design is agreed upon. We also understand that our clients may not have all the pieces of their solution's puzzle figured out and may need help in filling in the blanks. Where and when appropriate, we will offer suggestions on how to proceed.

Key Efforts required to produce an appropriate design:

- **Wireframes** – Wireframes are simple outlines of a solution's interface, in effect a 'skeleton', designed to illustrate the general look and feel of the solution.
- **Non-Functional Prototypes** – Non-functional prototypes can be thought of as 'interactive designs'. Allowing testers to press buttons, navigate between pages, open and close dialog boxes etc. The distinction of 'non-functional' is made because the designs will not have any implemented functionality, nor any 'real' data.
- **Flow Chart** – Flow charts are the main representation of a solution's behaviour, which will contain all possible scenarios a solution can expect to handle, and how possible inputs may produce expected outcomes. Flow charts help provide clarity and organisation to an overall design.



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YELLOW PAPER

A yellow paper is defined as a technical blueprint, detailing complete definitions of all algorithms and processes required for the project. The aim is to achieve a level of detail so fine that the solution may be built in its entirety from the bottom up using this document.

Key efforts required to produce the yellow paper:

- **Research** – time may be devoted to:
 - researching technologies that will support functionality,
 - consulting with industry specialists,
 - comparing the suggested algorithms' attributes,
 - implementing and testing functional prototypes to find the most efficient solution,
 - determining Extract-Transform-Load processes
- **Algorithms** – In essence, this will be the design of the solution's AI. Fountech Solutions AI specialists will analyse the available data, whilst taking the following factors into consideration:
 - the type of data processed,
 - time sensitivities,
 - the data's accuracy,
 - the frequency of the data,
 - accuracy vs. speed required from the output,
 - the complexity of data
- **Illustrations** – Graphics are usually required more often in a YP than a POV, due to the YP's likely increased complexity.
- **Drafts** – With all content ready and major questions answered, the drafting process may begin. The drafting process is an iterative one as the document will be revised as feedback is received. A quality draft will encompass the correct tone, logical structuring of content and continuous flow of the document.

PROOFS OF CONCEPT

During the yellow paper phase, various potential solutions that address the client's needs will be identified. To test the viability of those solutions, we will create small scale 'proofs of concept' that aim to test each solution efficiently. This saves time in the long run as we discard non-viable solutions along the way. Prototypes may include only software implementations, or both software and hardware implementations.

PATENT APPLICATIONS

As the yellow paper is the AI-solution's design, it contains all the information necessary when applying for Intellectual Property (i.e. patent) protection.

At this stage, we would liaise and work closely with IP experts, deconstructing the technical document to the required level of detail. Through a series of drafts, technical experts, Fountech Solutions, and IP lawyers would derive a patent application that defines the technology's novelty, innovation and industrial applicability, which are the three pillars required for a successful application.

The content of patent documents usually includes:

- What problem is the technology trying to solve? (i.e. identifying the industrial use case),
- How is the technology furthering the current state of knowledge? (i.e. why it's innovative),



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- How is the technology better than that of competitors? (i.e. why it's novel),
- How the technology works in broad terms, via example use cases and descriptions,
- Technical diagrams, explaining complex procedures and flows.

DEVELOPMENT

Using the yellow paper as a blueprint, the development phase is broken down into three separate components:

1. **Modules** – The AI's modules (i.e. compartmentalised functionality) is developed, creating the AI.
2. **API** – The AI is exposed via an API so that it may be utilised by the authorised application(s).
3. **Application** – Application(s) will be developed via those API's, allowing users to perform various functions on or with the relevant data.

The development phase is the largest in terms of time and cost. Building, testing and quality assuring a market-ready solution requires very significant effort. Consequently, for each component of the development phase, three versions of the component are developed, each having a distinct purpose and building upon the last, as explained here below.

ALPHA VERSION

The alpha version is the first version that is usable and testable. Alpha software can be unstable, resulting in crashes or data loss. In the beginning, the alpha software may not contain all of the features that are planned for the final version but will, at least, contain key operability features. In general, our alpha versions aren't made available externally, unlike 'open source' solutions that are often publicly available. The alpha phase usually ends with a 'feature freeze', indicating that no more features will be added to the software. At this time, the software is said to be 'feature complete'.

Key efforts required to produce the alpha version:

- **Setup Database** – A database will be created to store all the relevant data passing through or calculated by the system. This is a crucial task, as data is the fuel for the AI engine.
- **Setup Servers** – Applications require servers to host all backend functionality (e.g. authenticating users as they login). Nowadays, server setup is easy with many cloud-hosting providers (e.g. Microsoft Azure) simplifying the process.
- **Connect Data Sources** – The solution will need to connect to a number of data sources. The most popular method of data gathering is via API's. From such sources, valuable data will be extracted, transformed into the format required and loaded into the system. This 'Extract-Transform-Load' process is more commonly referred to by its abbreviation; **ETL**.
- **Implement & Optimise Algorithms** – The designed algorithms will now be implemented into the solution. At this point, the algorithms have been designed and refined from a logical perspective, but due to their implementation onto supporting technologies, like servers, they may need to be further technically refined, for example, in terms of types of operating system, availability of libraries, hardware processing power etc.
- **QA** – During the development of the alpha version, extensive quality assurance testing will be performed. QA testing aims to intentionally 'break and trick' the system so that bugs and errors may be discovered and resolved to produce a 'bullet-proof' application. In code, software developers will develop large quantities of what's referred to as 'unit tests', which are algorithmic trials used to ensure that the output of software is valid.



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BETA VERSION

The beta phase generally begins when the modules are 'feature complete' but likely to contain potential bugs. Beta software will generally have many more bugs in it than completed software. It may have speed or performance issues and may crash or lose data. The focus of beta testing is to improve practicable usability of a product. The process of delivering a beta version to a (usually limited number of users) is called 'beta release' and this is often the first time that the software is made available outside the development team. Beta version software is often useful for demonstrations and previews to prospective customers, often referred to as 'early access'.

'Beta testers' are people who actively report issues encountered using the beta software. They are usually customers or representatives of prospective customers from the organization that develops the software. Beta testers tend to volunteer their services free of charge but often receive versions of the product they test, discounts on the release version, or other incentives.

Key Efforts in developing a beta version are:

- **QA & UAT** – In addition to another round of QA, user acceptance testing (UAT) will now also be conducted. The beta version will provide 'early access' to a select number of users whose purpose is to test the usability and performance of the system. At this point, stress testing will be undertaken, seeing how the solution fares against a number of real users who are making resource-intensive demands.
- **Algorithm Optimisations** – Based on UAT & QA tests, further refinements may be required.

VERSION 1.0.

A completed V1 of the solution, in the form of APIs, will be a fully tested, market ready version, able for full scale operability and integration into the overall solution / application. The nature of V1's work mostly involves polishing the solution and taking defensive measures to ensure its durability. The development time between beta and V1 is relatively short as little innovation happens here.

Key Efforts in building V1 are:

- **Final QA & UAT** – A final round of testing is performed to ensure the quality and usability of the system.
- **Final Algorithm Optimisations** – Algorithms are methodically reviewed and, where necessary, tweaked to win small improvements.
- **Deployment** – Once the solution is polished and performing well, the application will be deployed. That is, the developed APIs can be made available for your app developers to integrate into any other apps you may require, so that the AI can be released to the general public. Of course, we are also happy to carry out the API integration ourselves.



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POST-DEVELOPMENT SUPPORT

After the deployment date of Version 1.0., 'after-sales' support will be offered for a negotiated period, to help you integrate your AI solution into your company's products and services.

Examples of such support may include, but is not limited to:

- **Integration into App** – Assisting your application developers to integrate the AI (API's that we expose) into the overall solution.
- **Software Refinements** – The upgrading or updating of software.
- **Knowledge Transfer** – Communications will remain ongoing so that we may answer any questions you may have, helping you to understand the solution's specifics and complexities.
- **Staff Training** – When necessary, we will train a representative from your team on how to use and maintain the solution, so they may, in turn, train your workforce.
- **Scheduled Maintenance** – To keep the solution in top-condition, the appropriate maintenance will be scheduled and performed.
- **Software Repair** – In the case where defects are discovered, we will either replace or repair the defective components.
- **System Monitoring** –The monitoring of the system's overall condition. This will be done in two parts; first, by creating a system of alarms to immediately alert the necessary individuals when a 'bad' event occurs and second, by creating log book to keep a historical record of all actions the system takes, helping to discover why and where errors occurred.
- **Code Revisions** – To improve upon the efficiency of algorithms, we may perform code revisions to make further improvements.
- **AI Training** – We may help you train your model with quality, deterministic data, so that you may take full advantage of the power your AI provides you.
- **Additional QA & UAT** – If a new version of your solution has been released and you wish to quality assure and/or test your users' acceptance of the new version, we can help you in performing an additional round of QA & UAT.

To find out what specific after-sales support you may need and how Fountech Solutions may best help you, please contact us.



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About Us

FOUNTECH SOLUTIONS – ‘THE FUTURE OF AI IN YOUR HANDS’

At Fountech Solutions we offer a rare commodity, deep expertise in Artificial Intelligence and strong commercial understanding of all AI-related matters.

We don't develop AI for its own sake. We don't see that pushing technology is a sensible idea until there is a clear need to do so. When that need arises, our AI is designed to provide seemingly simple solutions to complex practical problems. We know how to integrate technology into businesses because we understand primarily that return on investment is as crucial as providing an efficient solution to a given problem. We address real issues to payback your ROI as early as possible: clearing bottlenecks, optimizing processes and reducing costs.

As a result, we develop 'novel' instances of quality AI; sometimes, to avoid re-inventing the wheel, from a recipe book of previously used ingredients and methods, sometimes created straight from scratch. Whichever ingredients and methods are used, everything is 'cooked' together in a proprietary 'logic layer', containing both AI driven and other algorithms. Each time that we create a new recipe, improvements are made. Every tweak and update ensures that our products are unique in functionality, purpose and the results that they bring.

Fountech's Founder and serial entrepreneur, Nikolas Kairinos, has taken numerous tech startups from a zero balance sheet to millions in revenue; consequently, we understand the concept of bridging the gap that sometimes exists between technical and business people, to create products that return tangible results.

Our companies press coverage is well established, as we are a worldwide authority on AI integration and design, having worked in the USA, Europe, Asia and the Far East. We are regularly featured and referenced in international publications, as seen in our [media](#) summary.

To find out more about Fountech Solutions generally, please visit our website; <https://www.fountech.solutions>.

To find out more about our [methodology](#) when we work with clients, please see our methodology overview.

We would love to connect with you on [LinkedIn](#).

THE FOUNTECH SOLUTIONS APPROACH

A Winning Formula that Works for Everyone!

We have a deep understanding of how algorithms work from a mathematical and computational perspective, so we usually create solutions from the ground up, then refine them as we go along, rather than using a 'one-size-fits-all' approach.

We don't use third-party platforms or products agnostically, just in the hope that they will work. Instead, we assess limitations and improve upon them if we choose to use products that we haven't built ourselves, from scratch.

We think, design, build & integrate custom AI-powered solutions by understanding your business. Using your data, your operating model and your specific goals, our custom solutions use a tried and tested methodology of proof of value, proof of concept and finally design and build. Each stage being a stand-alone project with clearly defined objectives. These steps actually save time and real money. This is because we can assess the viability of potential solutions, then choose the optimum way forward. In short, we do the math, then make it work for you.

Each project is managed throughout by two Lead Consultants, a commercial expert and a PhD-level AI architect. Clients are also supported throughout by the greater Fountech Solutions team which consists of entrepreneurs, academics, programmers, research assistants, designers, architects, mathematicians and lawyers. Thus ensuring that you as our client receive all the support, advice and guidance you need to make your AI-powered solution a success.

If we don't specialise in it, we have a wide range of partners and resources we can bring in, so that we provide a complete, turn-key solution; from financial services to integrating disruptive technologies such as virtual reality. This diversity means that we can approach projects from an interdisciplinary perspective.



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We are keen to hear from those interested in using our services to put themselves ahead of their competition. We often work by answering your – “*What if we only knew...?*” question, where the answer would revolutionise your profitability and your customers’ experiences.

Every time you learn new ways about putting your business forward, so do we. That’s why we’re so keen that you ask us your burning question, So, don’t hesitate, why not **contact us right now for an absolutely obligation-free initial consultation:** ai@fountech.solutions

“You don’t just learn AI; you need to think it.”

– Nikolas Kairinos, Founder



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