G-Cloud 15:

Oakland Intelligent Agent Software Service Definition

Oakland

The Promise of Artificial Intelligence (AI)

AI provides rampant opportunity to support public servants in interpreting, applying, documenting, and communicating government laws and regulations, whilst improving compliance, cost, and control. The combination of improving methods of perception (natural language processing, audio processing, and computer vision) with scaling pattern recognition and problem solving techniques (machine learning, logical processing, and optimisation modelling) provide opportunities for prioritisation, anomaly detection, simulation, and forecasting like never before.

These combine to provide opportunities in summarising or extracting meaning from large volumes of information, interrogating data or public information sources, digitising or "reading" handwritten / physical documents, recognising patterns or objects in texts and images, continually watching or observing live events, following and maintaining rule based decisioning, validation and checking against clear standards, and chatting in structured contexts (e.g. Q&A, support). All of these aspects can enhance and support public servants in the delivery; however, many implementations of AI in the government space have struggled.

Challenges with AI

Too often, drop-in tools are used in AI proof of concept projects that are:

- Generic: not adapted to use cases
- Forgetful: don't learn from interactions
- Hallucinatory: optimised only to be plausible
- Un-validated: unchecked against internal standards
- Costly: API calls expensive at scale
- Insecure: risks to IP and privacy

This ultimately leads to AI solutions that don't get adopted because either the AI solutions don't impact core processes because they cannot integrate, or end processes are "bent out of shape" to accommodate AI solutions which are not properly adapted. Additionally, many proof of concept projects get a lot of buzz at the start, but, without process context, fail to secure momentum to lead to sustainable change in the orgnisation.

Intelligent Agents

At Oakland, we have developed an Intelligent Agent framework that works within the context of the host organisation. It is:

- Adaptable to complex interactions and high velocity processes
- Aware of its environment and the problems it needs to solve
- Empowered with the means to influence outcomes
- Controllable to ensure quality and security

Unlike off-the-shelf chatbots, an Intelligent Agent is a language model is equipped with tools and awareness to create a human-like reasoning engine. It is context aware, trained on subject-specific data, task oriented, and leverages custom tools. Our framework allows us to rapidly design and deploy Intelligent Agents via repeatable methods, and, in the context of supporting public servants, it will help take AI to the problems they face, rather than trying to find a problem.

Potential solutions in the government space might include:

- An AI-powered 'Asset Historian' reads and summarises asset records to quickly provide a single, 360 view of the asset
- A generative AI overlay gives employees access to the information need and allows them to ask free text questions.
- AI reads CVs, populates and skills matrix and uses the data it creates to dynamically optimise task allocation
- AI uses control room policies, asset history and alarm description analysis to read and filter telemetry alerts for control engineers.
- An AI 'project analyst' reads project updates to spot recurring risks. These are summarised and populated in a dataset

Our Approach

We can deploy Intelligent Agents in as little as 8 weeks, and scale within a further 8-10 weeks. Our typical engagements cover the following:

- Discover: Determine the baseline of where you are at today and where you want to be. Identify and mobilise quick wins. We establish a clear point of reference from which work can begin. This enables your strategic vision to be built and defines the gap from your as is to that ambition.
- Define: Define a data capability to deliver on the vision for the future. We will design the strategy, operating model, and associated technology architecture to achieve the vision.
- Plan: We will establish the processes, standards, technology, and organizational changes to manage your information. We will go into more detailed design and begin to socialisation the change for the deployment to come.
- Execute: We will build the technology and then roll out changes within the organisation in an agile fashion, learning along the way.
  Pragmatically delivering change into the organisation, recognising that things will change.

- Adapt: The final stage is based on the mantra of continuously improve the capability in line with key performance indicators. This provides assurance that the deployment is fully embedded and value does not erode over time.