

Decision Intelligence for Health & Social Care

Service Definition Document

 quantexa

About Quantexa

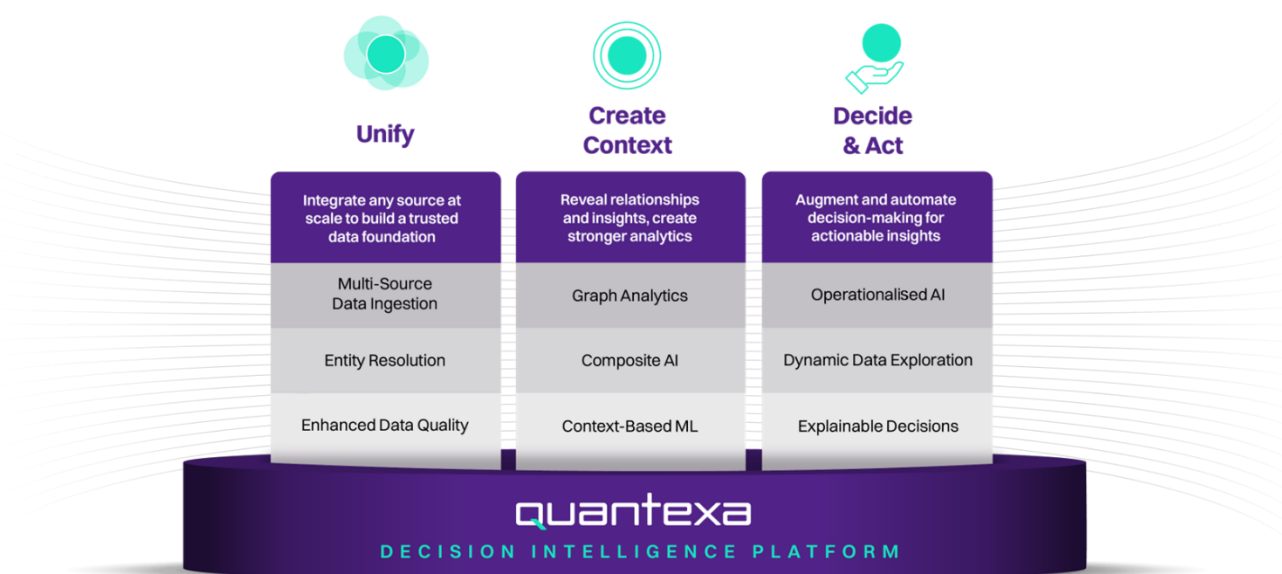
Quantexa is a UK company, founded with the objective of enabling organisations make better business decisions. Our Decision Intelligence Platform excels at ingesting billions of disparate and siloed data points, often of poor quality, and stitching them together to create a trusted, unified, context-rich, and reusable data resource across your organisation.

Our open, modular, and integrated approach enables augmented and automated decision-making that will allow your teams to do their best work. With a wealth of experience in multiple sectors, we have deployed our technology to build world-class solutions using decision intelligence with proven results that protect, optimise, and grow both public and private enterprises globally.

Since our inception, Quantexa has expanded globally, establishing offices in locations such as New York, Boston, Washington DC, Brussels, Toronto, Singapore, Melbourne, and Sydney. Our reference clients in the UK include the Cabinet Office, HMRC, Crown Commercial Service, NHS, HSBC, NatWest and Vodafone.

Decision Intelligence for Health & Social Care

Conceived by the original pioneers of entity and network analytics, Quantexa's Decision Intelligence Platform has been developed from the ground up to overcome the challenges of legacy platforms including scalability, granular security, accuracy and timeliness. Quantexa's platform contains open and fully explainable advanced Artificial Intelligence and Machine Learning techniques which leverage over 20 years of expertise and has been trained & proved on over 100 billion records.



An open and modular enterprise platform for outcome-driven solutions

Quantexa's Decision Intelligence Platform is designed to deliver numerous benefits to health & social care organisations, including:

- Accurately bring together disparate records to create a 'golden record' of data
- Reveal hidden insights and risks to patients and citizens
- Inform evidence-based policy, strategy, and decision making
- Improve the accuracy and confidence of automated and augmented decision making
- Enhance organisation efficiency by automating investigation and data management tasks

- Monitor and understand end-to-end care journeys in the real-world, at patient, cohort and population scale
- Identify areas to improve care or fortify operational resilience

Health & Social Care Services

Contextual Patient 360

Using best-in-class Entity Resolution technology, Quantexa is able to create holistic views of individual patients to drive timely, personalised interactions across digital and physical health and social care services. Quantexa not only provides a view of individuals, but also their connections – including across shared locations, family and households. As a result, frontline teams have the full context to better understand patient behaviour, risk, and improve services. pKYC methodology, pioneered within the financial industry, ensures that Patient 360 is always showing the health or social care user the most up-to-date information.

Quantexa has security at its core, allowing you to control user access to sensitive data, and can dynamically serve different views to different users based on their permissions. This enables you to serve a broad set of users from a single foundation of trusted data.

Integrated Data Platform

Quantexa's integrated data platform links data from multiple sources using healthcare specific data mapping techniques and secure entity resolution and network capability. Through dynamic Entity Resolution the platform connects billions of data points from across internal and external data sources, creating a holistic view of real world entities. Network Generation empowers users with a view that's enriched with vital information about relationships between people, places and events. Analytics then facilitates clear understanding of circumstances to proactively identify trends, patterns and risks.

Create trusted golden records about patients and citizens in streaming or batch, with full control and curation by data stewards. Overcome data quality issues and achieve a step change in results, consolidating patient records and enabling enrichment from across disparate sources, including standardisation and normalisation of codes. All data can be used by downstream applications via APIs, batch export or stream, so application and analytics teams have confidence they are all using high quality data.

Care Journey Coordination

Quantexa's Investigation, Exploration, Search and Discovery capabilities offer analysts the ability to map care pathways at scale and in real-time, within and across organisational boundaries, identifying areas of pressure within a healthcare system or organisation. By providing the holistic view of care pathways, Quantexa improves decision confidence by exposing the full context surrounding areas of improvement. Decision makers can use data provided by Quantexa to inform evidence-based policy, strategy, and decision making.

Cleanse, de-duplicate and monitor waiting lists dynamically in real-time, linking internal and external data-sets to provide additional context in order to support prioritisation of patients based on real-world need, and alert if patient circumstances change that could affect their prioritisation.

Citizen Risk and Population Intelligence

Quantexa's platform is designed to create a high quality connected single citizen view to help organisations understand real world relationships and circumstances and enable accurate decision making with complete context. Quantexa makes it simple to understand population scale datasets with enhanced segmentation and cohorting capabilities which can be used for timely interventions with alerting of citizen and household risk. Population intelligence enables next level population risk stratification and prediction and create enhanced understanding of populations for system commissioning decisions, and encourages cross-organisational and third party cooperation.

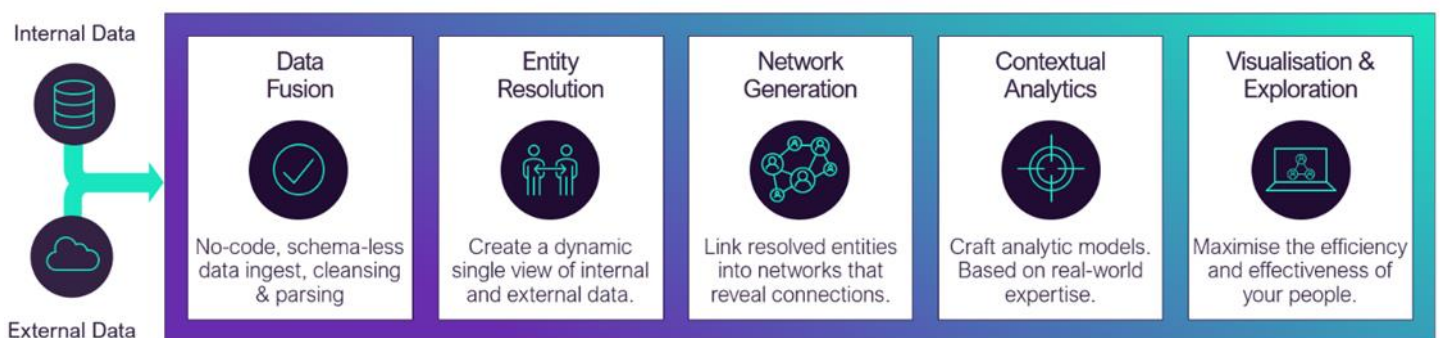
Quantexa's open architecture integrates seamlessly into existing IT ecosystems, with flexible deployment options for faster time-to-value. Quantexa is specifically designed to overcome challenges such as poor-quality data and siloed systems. We use more data and provide better context to generate actionable insights. It's open, modular and integrated approach enables augmented and automated decision-making that allows users to do their best work. It scales across applications giving repeatable and scalable processes with predictable costs, leveraging existing investments to proactively and efficiently assist all lines of business.

Operational Resilience

Quantexa creates high quality data assets from disparate, variable quality sources in order to help organisations understand future demand with a detailed view of entire populations. Creation of a data warehouse with analytical models enables outcome-based commissioning and evidence-based decisioning, and helps an organisation understand operational risk using accurate data. The platform also supports supply chain integrity and the identifications of fraud across the healthcare landscape.

Quantexa is specifically designed to overcome challenges such as poor-quality data and siloed systems. We use more data and provide better context about the stakeholders across the care ecosystem to generate actionable insights that enable organisations to detect more anomalies, especially sophisticated fraud or organised crime. We significantly reduce inaccurate reporting, and speed up tasks, removing manual data preparation, allowing business operations to focus on managing demand and preparing for future requirements.

Our Technology



Data Fusion

Data Fusion accelerates onboarding of disparate and ambiguous data, from both internal and external data sets, using low-code, scalable, high performance data preparation and ingestion capabilities including AI /ML-powered mapping, parsing, cleansing and matching models. Quantexa has no pre-defined data model or schema, allowing for faster deployment and the use of all available data to ensure the highest possible accuracy and context.

Entity Resolution

Quantexa's proven Entity Resolution engine unifies your data to create a single view of entities, faster and more accurately than any other alternative on the market by employing configurable, pre-trained machine learning models, which use tens of thousands of data elements iteratively in combination, to match across multiple documents or data sources. Quantexa's Entity Resolution supports batch, real-time, and uniquely, dynamic processing, which allows for the specific view of an entity to be built at the time of request, driven by the permission, geographic, or use case configuration of the user making the request.

Network Generation

Resolved entities are automatically connected into networks that reflect real world relationships, revealing the context of how people, objects, locations and events interact with each other. Quantexa is a graph technology platform where network graphs are built dynamically when requested, and specifically relevant to the problem being solved. This approach preserves all the benefits of network analytics including identifying commonality, inference and hidden risks without the resource costs or limitations of a conventional graph database.

Advanced Analytics

Quantexa's Assess module enables data scientists to access entity and network features to create their own monitoring and analytics models utilising existing tools and data science investments. Quantexa also provides 'Detection Packs' that offer out-of-the-box, configurable risk identification models that accelerate deployment and development.

Visualisation and Exploration

Quantexa Explorer UI enables teams to search for and visualise data in rich detail, including relevant relationships, transactions, and behaviours. Users can create dynamic queries across billions of data points to highlight risk, explore large volumes of data easily and identify significant information, trends, and patterns at the population level, or refine searches and filter data to understand situations and circumstances at the local, cohort or individual level.

Quantexa Innovation

Quantexa is continually innovating and adding new features and services to improve organisational efficiency through the adoption of cutting-edge technologies such as AI and Machine Learning, allowing users to focus on creating true organisational value. The following are examples of what is available through Quantexa Innovation.

GenAI

GenAI is an LLM-powered assistant that streamlines and enhances analyst-led investigations in Quantexa. With this technology, a user can query large and disparate data via a natural language interface or selected prompts to understand the context of an investigation at scale, leverage integration with Q-Knowledge Graph to generate insights from population-scale networks, and speed up investigation efforts by creating automated investigation summaries and reports.

GenAI will empower investigations, analysis and decisioning through human-machine teaming, increase efficiency and standardisation of report writing and escalations, and distil complex investigations into easy-to-understand summaries.

Text-to-Networks

Text-to-Networks is an NLP-based solution designed to seamlessly identify and extract entities and relationships from unstructured data sources to unleash the full potential of organisations' unstructured data for more informed decision-making and insights. Text-to-Networks enables the introduction of documents such as news articles, intelligence reports and investigation summaries to investigations without manual entry, the extraction and resolution of entities from text-based documents, and automatic network creation using entities and context extracted from unstructured documents.

Text-to-Networks unlocks valuable intelligence from previously siloed datasets that have been historically too complex to include in investigations, and reduces the time to value when analysing large volumes of text to uncover actionable information.

Case Management

Quantexa Case Management is an integrated case management system that can be added to Quantexa's UI so organisations can manage end-to-end investigations within Quantexa. With Case Management users can automatically be assigned cases based on analytical scores and alerts, view relationship networks within a case, see context of related and linked cases and investigations, create custom workflows or leverage pre-made workflows and seamlessly escalate and reassign cases.

Why is our technology different?

Accurate

- **99%** matching accuracy for single views
- **20%** proven de-duplication of records
- Over **75%** reduction in false positive alerts

Fast

- Accelerate deployment & time to value with low-code, schema free data ingestion
- Scale up to **60 billion** records
- Reduce analysis time from weeks to hours

Open

- Easy-to-integrate into your existing tech stack
- Flexible, modular platform easily configured into your operations
- Extensible with multiple views & use cases

Secure

- Advanced permissioning and role-based data access
- White-box Machine Learning models
- Transparent scoring and alerts



Becoming Self-Sufficient

Whilst Quantexa supports all its clients with service adoption and deployment, we know that many organisations wish to own and manage their systems independently. Our end-to-end training academy takes clients along the path to self-sufficiency, supported along every step of the way.

If clients do not have the capacity to train in-house staff, we have large network of clients with skilled Quantexa teams who are able to deploy, manage and enhance implementations of our technology and have a wealth of experience at operating in hybrid teams.



Initialise

The Quantexa and Customer partnership begins. The Customer will begin to train internal Centre of Excellence team. Quantexa or partner support high during this period.



Scale

Customer teams will become skilled and self-sufficient. Still a blended team of Customer and Quantexa, but Quantexa will be the minority.



Full Self-Sufficiency

Customer teams are fully self-sufficient and only coming to Quantexa for support where required.

Client Self-Sufficiency

Initialise the Capability

Scale the Capability

Full Self-Sufficiency

Roll-out of first / initial use case into production

- Customer team completes Quantexa training
- Blended team of Quantexa and Customer resources
- Customer teams are shadowing and working with Quantexa teams to configure/implement the platform

Initial use-case in production. New data / capabilities / use cases are being added to the platform

- Customer moves to become "prime" on the delivery of the platform with Quantexa team support reducing
- Customer team will move towards self-sufficient support using the Quantexa Communities and Support for help

Multiple use cases fully deployed within the Quantexa platform

- Full Quantexa Center of Excellence will be formed
- Requests for new data / capabilities / use cases will come from business areas direct to the CoE
- Fully supported by Communities and Q Support
- Regular roadmap sessions and reviews through Quantexa customer success

Activities