Quantexa for Borders Agencies
A Global Leader in Decision Intelligence Solutions

**Our Mission**
To empower every organization with the right data to make the right decisions.

**Our Vision**
To bring innovation and confidence in decision making to every industry in the world by driving the switch to contextual data.

**Our Investors**
- GIC
- Warburg Pincus
- dawn.
- Moody’s
- KPMG
- Accenture
- EY
- Google Cloud
- Deloitte

**Our Partners**
- British Patient Capital
- HSBC
- ABN AMRO
- AlbionVC
- BNY Mellon
- evolution equity partners
- Federal Public Service Finance
- Standard Chartered
- Allianz

**Some of Our Clients**
- Aylien Q1 Calendar Year 2023
- $1.8B Valuation

Founded in 2016 grown to 700+ innovators, thinkers, solution finders, problem solvers

Offices in London, Dublin, New York, Boston, Washington DC, Toronto, UAE, Malaga, Amsterdam, Brussels, Melbourne, Sydney & Singapore

Live in 70 countries with customers processing hundreds of billions of records with 1000's of users

100% ARR growth since close of Series D

Acquired Aylien Q1 Calendar Year 2023

$1.8B Valuation
Governments must pivot from traditional operating models to create a future that is more sustainable and resilient.

THE BOTTOM LINE

An agile and interconnected Government is key to developing a modern world of the future.

Trust in Government
Increased urgency for Governments to strengthen trust with citizens and address fundamental issues

National Safety & Security
Organized crime and fraud is rising sharply with criminal activity becoming more sophisticated

Workforce Efficiency
Manual processes and procedures are inefficient and exposed to risk

Modernization
Reliance on legacy technology is hampering the demand to scale faster

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**Quantexa DI Core Functions for Border Agencies**

### Use Cases
- Risk Driven Targeting
- Illegal Migration
- Terrorism Security
- Human Trafficking
- …

### Core Capabilities
- Entity Resolution
- Network Generation
- Advanced analytics
- Data Visualization

### Underlying Platform Capabilities
- Scalable: Proven at HSBC 50bn txns, 56 countries
- Fast to deploy: Easy to integrate data via schema-less architecture
- Transparent: ML ER models are distilled into white-box config
- Highly accurate: 99% accuracy on unseen data in independent test
- Granular security: Role based access to data down to field level
- Open Architecture: Cloud/on-prem, standards based, open APIs

### Provence at HSBC
- 50bn txns, 56 countries
- 56 countries
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### Core Functions
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### Use Cases
- Passports
- Visa
- Interpol
- EURODAC
- News and Convictions
- Outcome Inspections
- Biometrics
- SIS
- VIS
- PNR
- Social Media
- …
Imagine you have multiple systems containing records with information on individuals, but they don’t share direct links.

How do you know they are the same person?

If you can’t answer that basic question, what do you really know? And how can you make trusted operational decisions?
Traditional matching techniques fall short every time

One in every two strategic and operational decisions does not take full advantage of the organization’s data. This is the Data Decision Gap.

<table>
<thead>
<tr>
<th>Individual</th>
<th>Ambiguous match</th>
<th>Individual</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>عبد السلام السويدي</td>
<td>Name</td>
</tr>
<tr>
<td>D.O.B.</td>
<td>12/03/1980</td>
<td>D.O.B.</td>
</tr>
<tr>
<td>Address</td>
<td>Al-Khandaq Street 12</td>
<td>Address</td>
</tr>
<tr>
<td>Finger</td>
<td>-</td>
<td>Finger</td>
</tr>
</tbody>
</table>

Result: no match

All operational and strategic decision making assumes two separate people exist

- Reliant on many record fields being present on both records and matching closely
- Doesn’t scale to today’s data volumes, coming from hundreds of sources
- Often displays accuracy of under 70%, resulting in missed matches (e.g., duplication) – or overmatching (e.g., incorrectly combining data)
Entity Resolution Creates an Accurate 360 View of Real-world Entities in Data

Entity resolution reasons like a human to connect all data sources, even if they weren’t designed to be connected.

Uses many data points to make incremental matches.

Enriches internal data with third party data, adding context.

Uses AI and scalable algorithms for a step change over traditional matching technology.

Data types: Names, companies, addresses, corporate registry data, contacts, watchlists, transactions, news articles

Resolution examples: people, companies, addresses, phone number, ...
Cleansing / Parsing – Out-of-the-box Functionality

Example data:
- ID
- Customer Details
  - Name
  - Registered Country
  - Registration number
- Director details
  - Name
  - Date of Birth
  - Passport number
- Addresses
  - Address
    - Customer Address
    - Valid From
    - Valid To
- Phone numbers
  - Phone number
  - Type
  - Email addresses
    - Email address

Business / individual classifier
- Business name parser
- Business name standardizer
- Individual name parser
- Name synonyms
- Gender guesser
- Address parser
- Address standardizer
- Country Imputation
- Phone parser / standardizer
- Email parser

Model to classify a party as a business or a person:
Customer Name: Quantexa Ltd. => Business

Business parsing library to cleanse and standardise data:
Business Name => Quantexa Ltd.
  - Standardised => QUANTEXA LIMITED
  - Brand => QUANTEXA

Name parsing library to cleanse and standardise data:
Director Name => Mr Jim D Hutton
  - First Name => JIM
  - Alternate First Name => JAMES
  - Middle Name => D
  - Last Name => HUTTON
  - Gender => Male (99.4%)

Natural Language Processing Address Parser:
Address => 31 E 54th St, # 2A, New York, 11377
  - Flat => 2A
  - House => 31
  - Street => EAST 54TH STREET
  - State => NY
  - Zip => 11377
  - ISO code => USA

Uses Google LibPhoneNumber to parse phones: Cell/fixed classification, validity check, geocoding etc

Email parser: validator and extractor
  (including username, domain, sub domain etc)
## Address Standardization / Normalization

Convert messy real-world addresses:

<table>
<thead>
<tr>
<th>Input</th>
<th>Output</th>
</tr>
</thead>
<tbody>
<tr>
<td>One-hundred twenty E 96th St</td>
<td>120 east 96th street</td>
</tr>
<tr>
<td>C/ Ocho, P.I. 4</td>
<td>calle 8 poligono industrial 4</td>
</tr>
<tr>
<td>V XX Settembre, 20</td>
<td>via 20 settembre 20</td>
</tr>
<tr>
<td>Quatre vingt douze R. de l'Église</td>
<td>92 rue de l'eglise</td>
</tr>
</tbody>
</table>

Normalization also to multiple variants:

<table>
<thead>
<tr>
<th>Input</th>
<th>Output</th>
</tr>
</thead>
<tbody>
<tr>
<td>92 Ave des Champs-Élysees</td>
<td>92 avenue des champs-elysees</td>
</tr>
<tr>
<td></td>
<td>92 avenue des champs elysees</td>
</tr>
<tr>
<td></td>
<td>92 avenue des champselysees</td>
</tr>
</tbody>
</table>

Transliterations:

<table>
<thead>
<tr>
<th>Input</th>
<th>Output</th>
</tr>
</thead>
<tbody>
<tr>
<td>Marktstraße 14</td>
<td>markt strasse 14</td>
</tr>
<tr>
<td>ул Каретный Ряд, д 4, строение 7</td>
<td>улица каретный ряд дом 4 строение 7</td>
</tr>
<tr>
<td>ул Каретный Ряд, д 4, строение 7</td>
<td>ulitsa karetnyy ryad dom 4 stroyeniye 7</td>
</tr>
</tbody>
</table>
NAME SYNONYMS

- Michael, Mike, Mikael, Michel, Mick, Micael, Michal
- Miguel, Mikel, Miquel
- Michael, Mike, Mickael, Mikael, Michel, Mick, Micael, Michal, Micaele, Micheal
- Michail, Mikhail, Mihail, Mihai, Mykhaylo, Mykhailo, Mykhailo, Michalis
For at least a year, beginning on May 20, 2002, two customers, Michael Greene (DOB: 04/10/1992) and his wife, Jane Bren (DOB: 05/04/1990), with fixed address: 1010 25th St NW, Apt C, Washington DC 20037 have been using our money transmitter service to send large amounts of money (in cash) to receivers named: James Matthews and Mary Matthews located in Antigua.

Entity Resolution on Unstructured Text

Quantexa NLP Pipeline
Key Components of Decision Intelligence

Dynamic Entity Resolution
Connect Data Points
Break internal and external data silos

Network Generation
Uncover Connections
Visualize data dynamically
The Power of Quantexa ER & Networks Within Customs Agencies

1. Gain a holistic person view: Eliminate silos by connecting data to create a single person view for a clearer understanding of related parties and hierarchies

2. Automated risk assessment: Proactively uncover hidden risk and augment the decision-making process with model-driven risk assessment

3. Uncover threats in real time: Enable improved and predictive decision-making to uncover new and emerging threats proactively and securely

4. Improve efficiencies: Use explainable data linking, AI and decision models to automate risk-driven decisioning

5. Integrate seamlessly: Easily integrate with your existing IT ecosystem, with flexible deployment options: native, or containerized for private and public cloud

6. Assess behavioural patterns: Proactively understand when behaviour changes or shows signs of risk

7. Risk assess: Include additional risk features such as, network risk for a more accurate risk assessment

8. Reduce false positives: Adopt a rapid close process to expedite false positives and automatically escalate clear risk

9. Perpetual monitoring: Send alerts for complex risk typologies to accelerate investigations

10. Accelerate investigations: Enhance operational efficiencies by empowering teams to effectively complete complex investigations
Demos
Only one of the resulting PNR records contain *wong* and *ying*. Quantexa is able to find these results due to its CJK capabilities.
Documents using different names will resolve to the same entity based on Quantexa’s CJK capabilities.
Resulting is very accurate entity resolution and rich context for risk detection. Similar techniques are used for names in Arabic or Cyrillic.
Q Assist is an LLM-powered assistant that streamlines and enhances analyst-led investigations in Quantexa.

Using Q Assist, a user can:

- Query large and disparate data via a natural language interface
- Understand the context of an investigation at scale
- Speed up and streamline investigation efforts
<table>
<thead>
<tr>
<th>Prove Points realized at Government Agencies</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Uplift in Fraud Detection</strong></td>
</tr>
<tr>
<td>Detection of connected applications liked to fraudulent behavior</td>
</tr>
<tr>
<td>180% Asian Pacific Government Agency</td>
</tr>
<tr>
<td><strong>Reduction of Traders</strong></td>
</tr>
<tr>
<td>Based on 15 million declarations from multiple European countries</td>
</tr>
<tr>
<td>94% European Customs Agency</td>
</tr>
<tr>
<td><strong>Additional Revenue per Year</strong></td>
</tr>
<tr>
<td>By resolving all the relevant entities and automatically creating networks and using AI/ML to detect the highest risk criminal networks</td>
</tr>
<tr>
<td>$1 Billion European Tax Agency</td>
</tr>
<tr>
<td><strong>Realtime Analyzing</strong></td>
</tr>
<tr>
<td>Resolved entities over 1 year BoL data for a G7 country with 450m data points from a 3rd party corporate structure data provider</td>
</tr>
<tr>
<td>500 million European Customs Agency</td>
</tr>
<tr>
<td><strong>Reduction of Pre-Investigation</strong></td>
</tr>
<tr>
<td>By resolving all the relevant entities and automatically creating networks for the investigator</td>
</tr>
<tr>
<td>3 weeks → 5 min European Tax Agency</td>
</tr>
<tr>
<td><strong>Matching Accuracy</strong></td>
</tr>
<tr>
<td>Calculated by comparing Quantexa’s resolved entities with the labeled data.</td>
</tr>
<tr>
<td>99% Corporate Structure Data Vendor</td>
</tr>
</tbody>
</table>
Questions
Thank you.