NORTHCODERS

{Data: Engineering}

Design

SharePoint

The Design team use specialised software tools to provide original designs, or their interpretations of customer requirements. The software saves the designs into XML formatted files, which the team keep in the company Sharepoint folders.

Sales

salesforce

ToteSys

The Sales team deal with current and prospective clients. Either they deal with requests to tender for a batch of bags with specific branding, or they pitch original designs to retail clients.

All their interactions are recorded on the company's Salesforce account, through a web application. Key data is manually entered into the company's own commercial software, ToteSys, which uses a Postgres database as its store.

Purchasing

ToteSys

The Purchasing team use the designers' work and the Salesforce data to figure out what raw materials need to be bought for the production run, and in what quantity. They input this into ToteSys, and use it to shop around lots of suppliers for the best deals, process bills, and monitor incoming deliveries.

What they do...

The company makes branded and customised tote bags for retail and corporate clients. The bags can come in a wide variety of materials, designs and fastenings. The company is renowned for the originality and stylishness of its products and for the speed and efficiency of its manufacturing processes.

[As they say in the movies, any similarity to any real business is purely coincidental. But, as they also say in the movies, this is inspired by real events...]

Production

kafka

mongo DB

The Production team have their own specialised software to manage the manufacturing process. The application tracks the progress of the production run, storing the details on a MongoDB database. Additionally, it gathers live monitoring data from the various machines to help technicians spot problems. This data is written onto a messaging broker (Kafka).

Dispatch

ToteSys

After the batch is finished and checked, the dispatch team use ToteSys to organise delivery of the products to the customer.

Finance

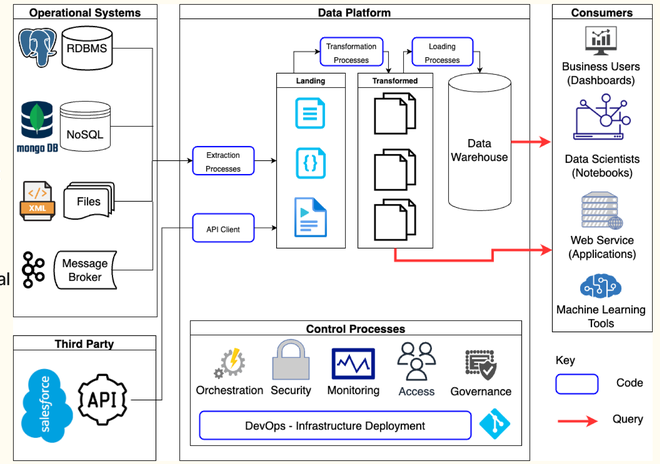
The transaction is finalised by the Finance team, who use ToteSys to issue invoices and collect payment. They also make extensive use of spreadsheets for accounting, analysis and creating financial reports.

ToteSys

What can we do?

As data engineers, we can provide some useful infrastructure:

- A data platform which brings all the data sources together in a unified format
- Full recording of all data events, so that deletes and updates are recorded
- Data optimised for analytical queries away from the operational systems
- Convenient tools for data scientists and business analysts to use for their work



The existing data infrastructure...

A Postgres relational database (part of ToteSys) that records all the commercial elements of their business, such as sales, purchasing, finance, and dispatch

mongo DB

A MongoDB (NoSQL) database which supports the manufacturing control software

kafka

A Kafka message broker which picks up sensor data and status information from the production equipment and sends it to the monitoring software used by the Production team

XML

Files in various formats held in a number of locations, including Sharepoint and local machines.

salesforce

A subscription to the Salesforce web service to manage client and order information. It's also possible to access the data with an API.