Netflix

Data Management

This is an academic work - there was no involvements from any of Netflix staff / employees

Summary

1. OLTPs
2. Data Warehousing
3. Data Strategy
4. Unstructured Data
5. Data Security
6. Data Governance
7. Conclusions & Reflections

Source: Netflix's webpage - academic work

NETFLIX

Who's watching?


Garrett


Grace


Luiz

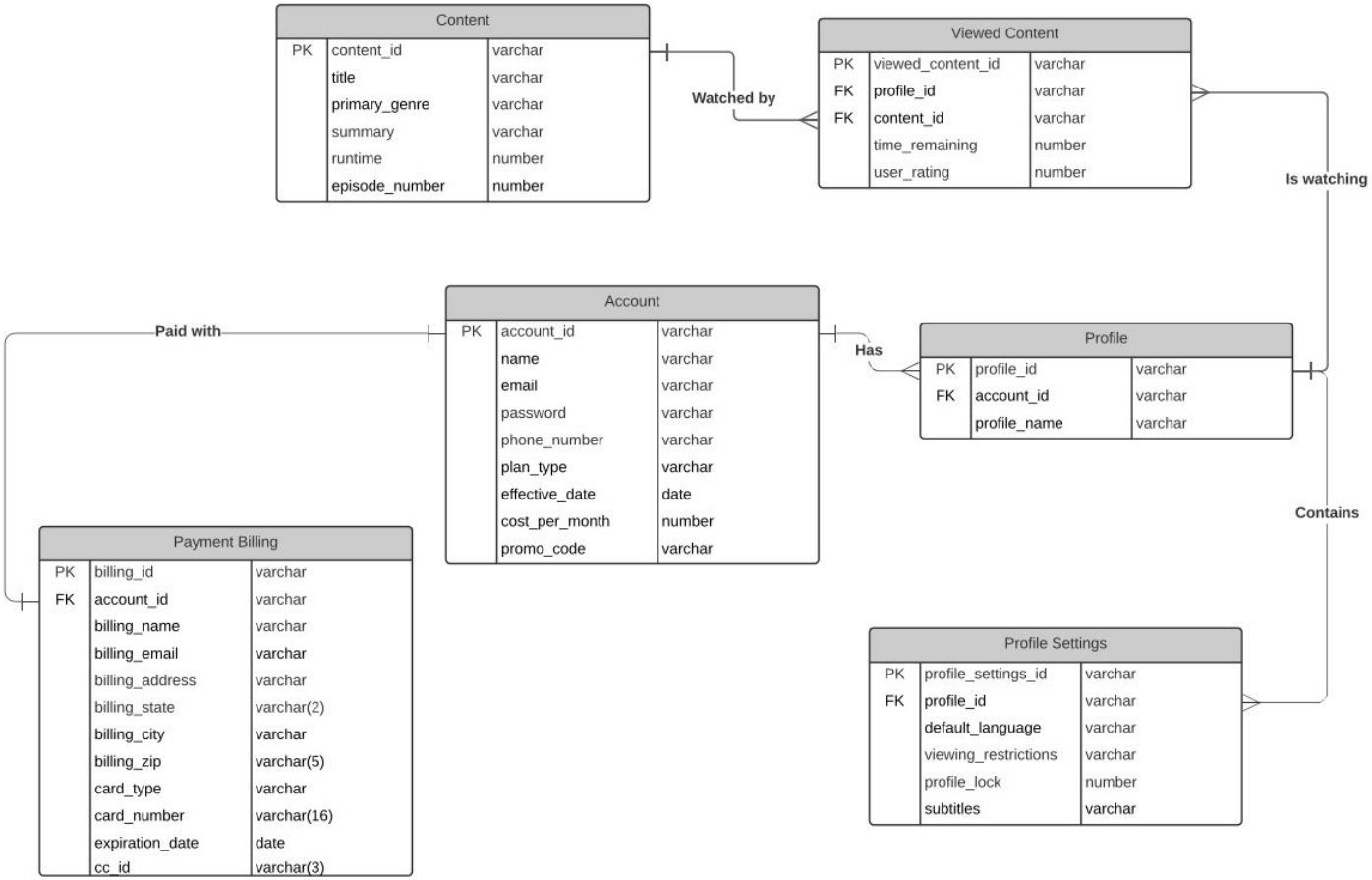

Courtney


Rick

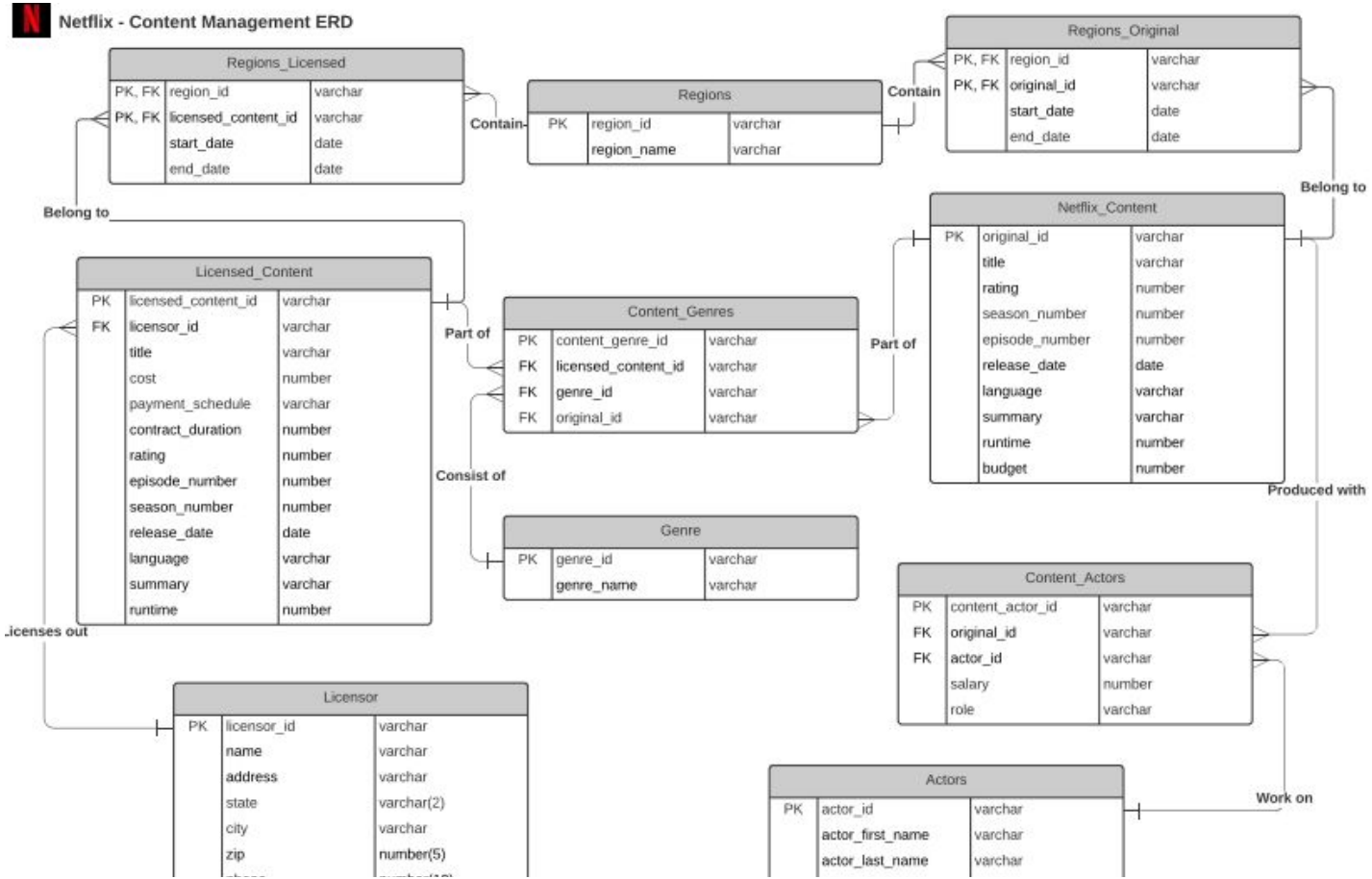

Ankit

Manage Profiles

OLTP - User Subscription



OLTP - Catalog Management



NETFLIX

Who's watching?

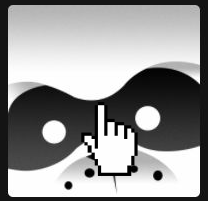

Garrett


Grace


Luiz

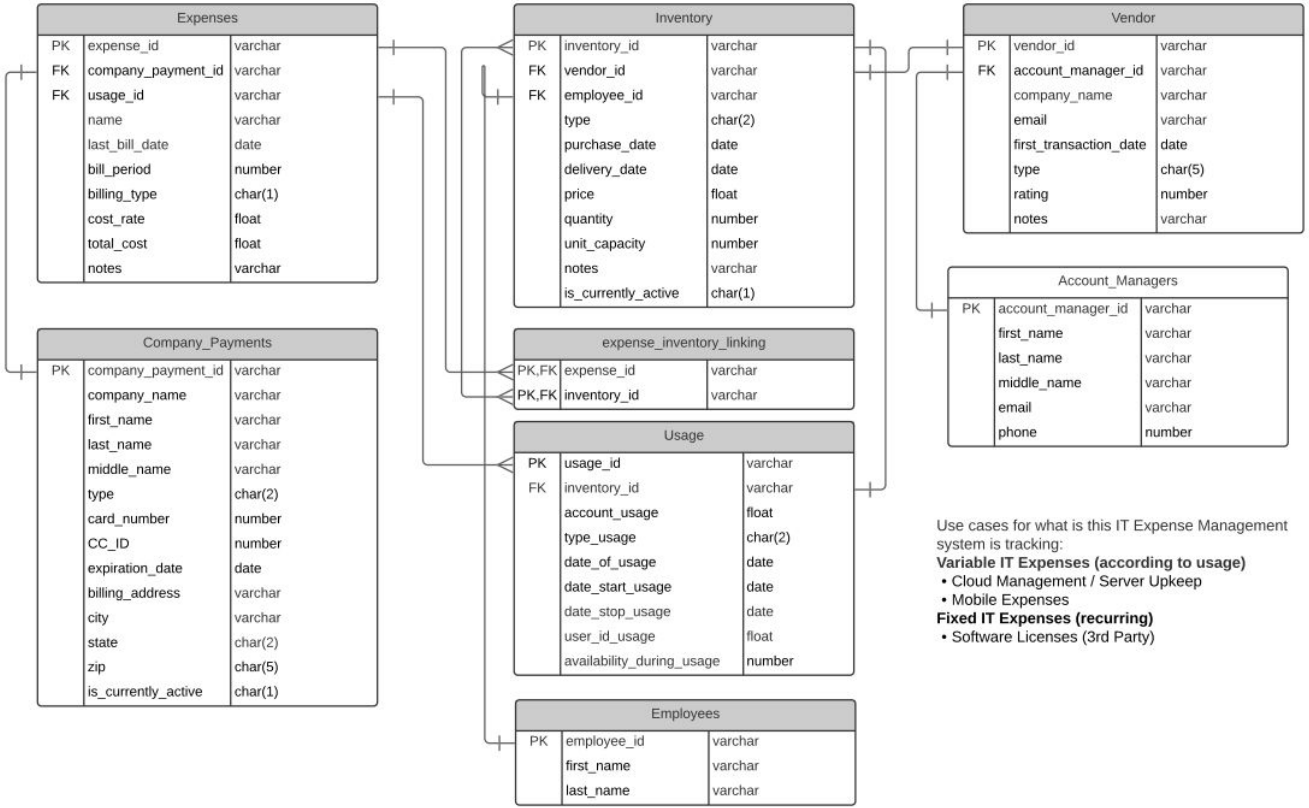

Courtney


Rick


Ankit

Manage Profiles

OLTP - IT Expenses



Use cases for what is this IT Expense Management system is tracking:

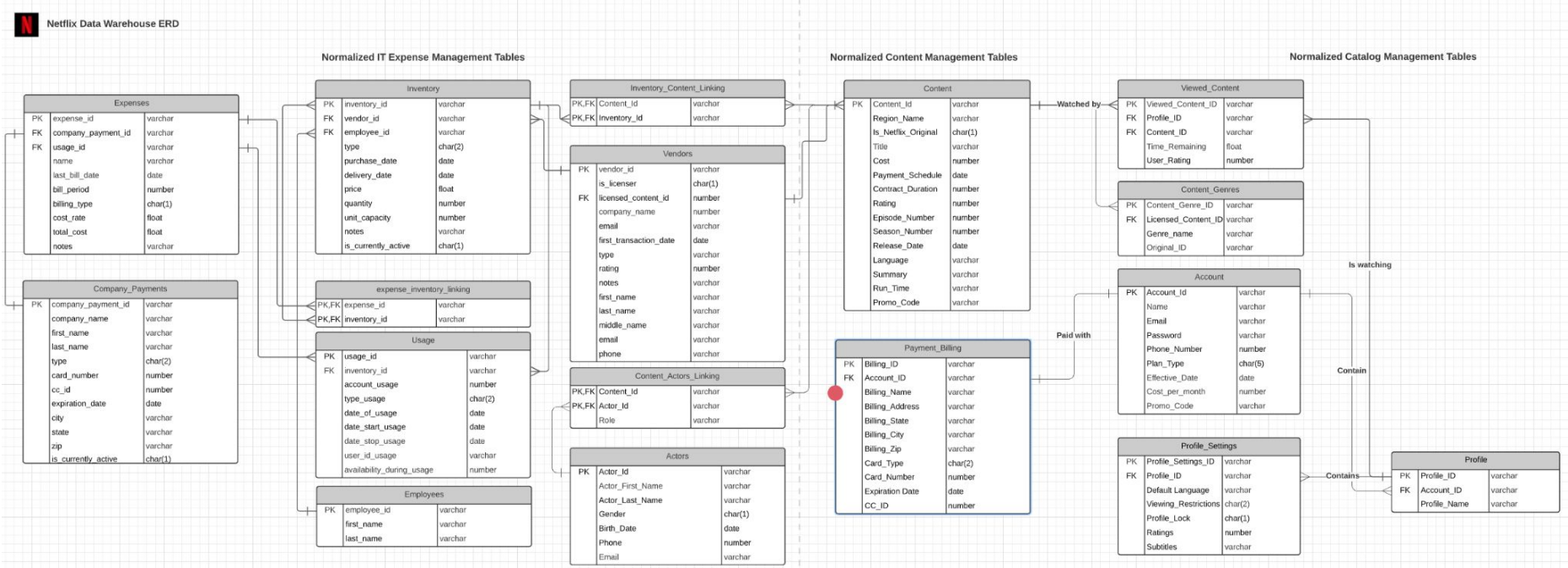
Variable IT Expenses (according to usage)

- Cloud Management / Server Upkeep
- Mobile Expenses

Fixed IT Expenses (recurring)

- Software Licenses (3rd Party)

Data Warehouse



NETFLIX

Who's watching?


Garrett


Grace


Luiz


Courtney


Rick


Ankit

Manage Profiles

Unstructured Data

1

Movies & TV Series Content

2

Navigational Data

This is an academic work - there was no involvements from any of Netflix staff / employees

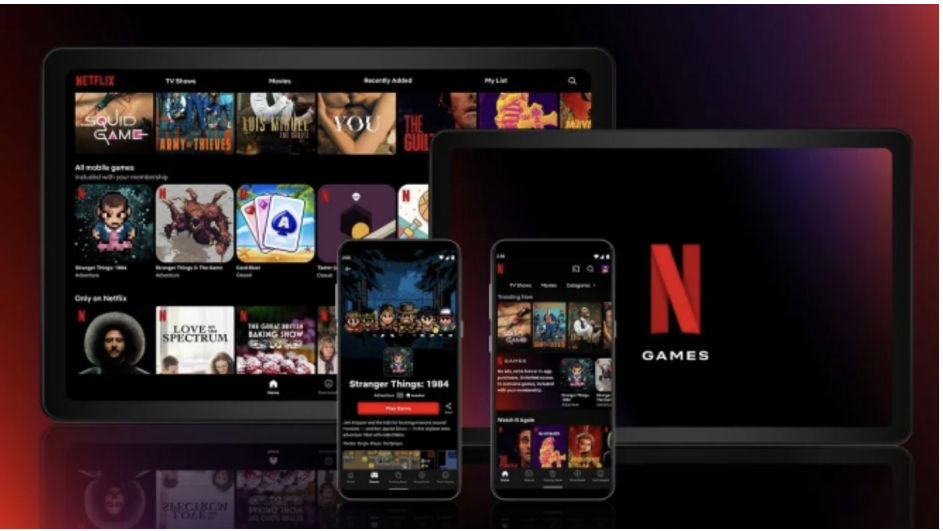
Unstructured Data

Movies & TV Series Content

1st

This is an academic work - there was no involvements from any of Netflix staff / employees

Unstructured Data



2nd

Navigational Data

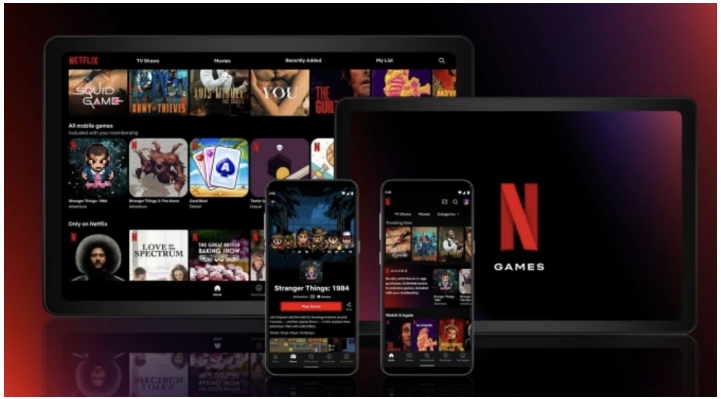
This is an academic work - there was no involvements from any of Netflix staff / employees

Unstructured Data

Movies & TV Series Content | Video data
Usually in form of a file (video format) [1] or streaming [2]

Why users like what they watch, relevant characteristics of the content such as audio track, scenes, plot twists, cast bonds (does the user watch this content because of someone?)

How to integrate: create a data model to extract relevant information from video content (using NLP), apply that model to the data to extract relevant information, store in the data warehouse



Netflix App | Navigational data
Usually as a log format

How users use Netflix app, what are the places they check or watch content, conditions in which users engage in notifications, which kind of scenes they watch on the go

How to integrate: get the log data transferred from the user app to the data warehouse, convert the XML/JSON to a relational structure and insert in a table that will store relevant information about user's behavior

Data Lake + Data Warehouse

Structured Data

Catalog System

Subscriptions System

IT Expenses System

Data Lake

The danger of Loch Ness Data Lake. Source: internet

Unstructured Data

Videos

Audios

Logs

processing

Data Warehouse

NETFLIX

Who's watching?


Garrett


Grace


Luiz


Courtney

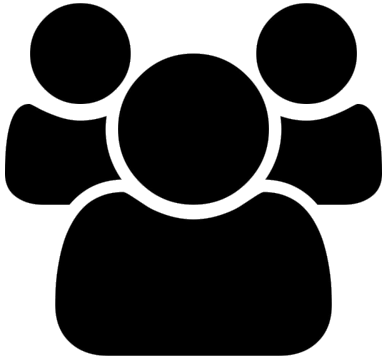

Rick


Ankit

Manage Profiles

Offensive Data Strategy

Highly Competitive Industry



Data to Drive Customer Experience

Scalability, Growth, Revenue Generation

NETFLIX

Who's watching?


Garrett


Grace


Luiz


Courtney


Rick


Ankit

Manage Profiles

Data Security Matrix

Identities & Roles

Internal Accountant - Keep track of company's assets, liabilities and equity

Financial Analyst - Analyze ways to increase company's profitability

Financial Manager - Manage all finances (expenditures, investments etc.)

Team Manager - Authorize various team-related expenditures

HR Manager - Authorize HR-related expenditures

Other Employees - Engineers, designers, sale representatives etc.

This is an academic work - there was no involvements from any of Netflix staff / employees

Data Security Matrix

	Expenses	Company Payments	Inventory	Usage	Employees	Vendor	Account Managers
Internal Accountant	Read	Read	Read	Read	Read (themselves)	Read	Read
Financial Analyst	Read	No access	Read	Read	Read (themselves)	Read	No access
Financial Manager	Read, Create, Update, Delete	Read,Create, Update, Delete	Read, Create, Update, Delete	Read, Create, Update, Delete	Read (themselves)	Read, Create, Update	Read, Create, Update
Team Managers	Read, Create, Update	Read	Read, Create, Update	Read, Create, Update	Read	Read, Create, Update, Delete	Read, Create, Update, Delete
HR Manager	Read, Create, Update	Read	Read, Create, Update	Read, Create, Update	Read, Create, Update, Delete	Read, Create, Update	Read, Create, Update
Other Employees	No access	No access	No access	No access	Read (themselves)	No access	No access

This is an academic work - there was no involvements from any of Netflix staff / employees

NETFLIX

Who's watching?


Garrett


Grace


Luiz


Courtney


Rick


Ankit

Manage Profiles

“82 percent of respondents know they face external regulatory requirements, but 44 percent of those respondents still don’t have a defined data governance policy.”

-Rand Worldwide survey

Data Governance - The Who and Why?

Flexibility

- Looser boundaries for much of kept data
- Facilitates faster, more robust data analytics across different teams
- Offensive strategies require access to a wide net of data by a variety of teams working in cohesion

Restricted Financials

- Exception here is a locked down finance data; only directly relevant parties should have access
- IT department, finance personnel

Data Governance Board

- Data managers, architects, analysts who will act as stewards
- Set goals, develop protocols, assign role access
- Where is data kept?

Governance Board

Liaison with Executive Leadership

- Develop governance strategy alongside
- Executive endorsement
- Resources allocated for success

Policy, Standards, Practices

- Sarbanes-Oxley
- Dodd-Frank
- COBIT
- HIPAA

Conclusions and Reflections

Biggest Takeaways

- Creatively apply our learnings to an industry leading business
- Working with a peer group allowed us to share ideas and problem solve

Further Applications

- Apply post-graduate roles at a managerial level
- Positively influence meetings and co-workers with the knowledge we have

Suggestions

- Deployment and Change Management Strategies
- Gantt chart or change management material