



Using Data Modeling for Digital Transformation

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Global Data Strategy, Ltd.

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The Business of Data



Donna Burbank



Donna is a recognised industry expert in information management with over 20 years of experience in data strategy, information management, data modeling, metadata management, and enterprise architecture. Her background is multi-faceted across consulting, product development, product management, brand strategy, marketing, and business leadership.

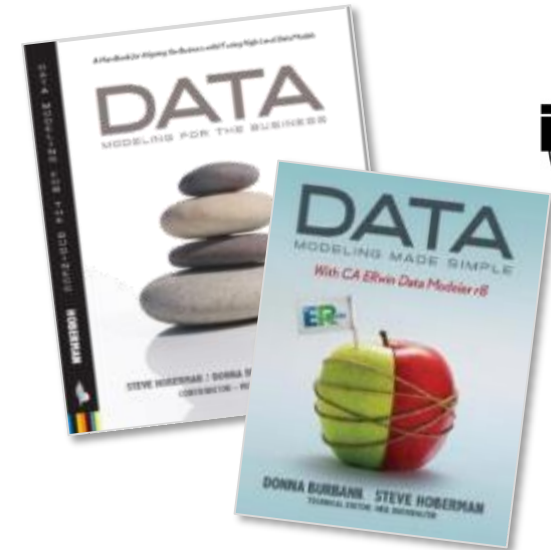
She is currently the Managing Director at Global Data Strategy, Ltd., an international information management consulting company that specializes in the alignment of business drivers with data-centric

technology. In past roles, she has served in key brand strategy and product management roles at CA Technologies and Embarcadero Technologies for several of the leading data management products in the market.

As an active contributor to the data management community, she is a long time DAMA International member, Past President and Advisor to the DAMA Rocky Mountain chapter, and was recently awarded the Excellence in Data Management Award from DAMA International in 2016.

Donna is also an analyst at the Boulder BI Train Trust (BBBT) where she provides advice and gains insight on the latest BI and Analytics software in the market. She was on several review committees for the Object Management Group's for key information management and process modeling notations.

She has worked with dozens of Fortune 500 companies worldwide in the Americas, Europe, Asia, and Africa and speaks regularly at industry conferences. She has co-authored two books: *Data Modeling for the Business* and *Data Modeling Made Simple with ERwin Data Modeler* and is a regular contributor to industry publications. She can be reached at donna.burbank@globaldatastrategy.com Donna is based in Boulder, Colorado, USA.



The Rise of the Data-Driven Business

Data, more than ever, is seen as a key business asset and strategic differentiator.



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Challenges and Opportunities Confront the Data-Driven Business

Most companies capture a small fraction of their data's value

Data is Driving the Future of the Global Economy

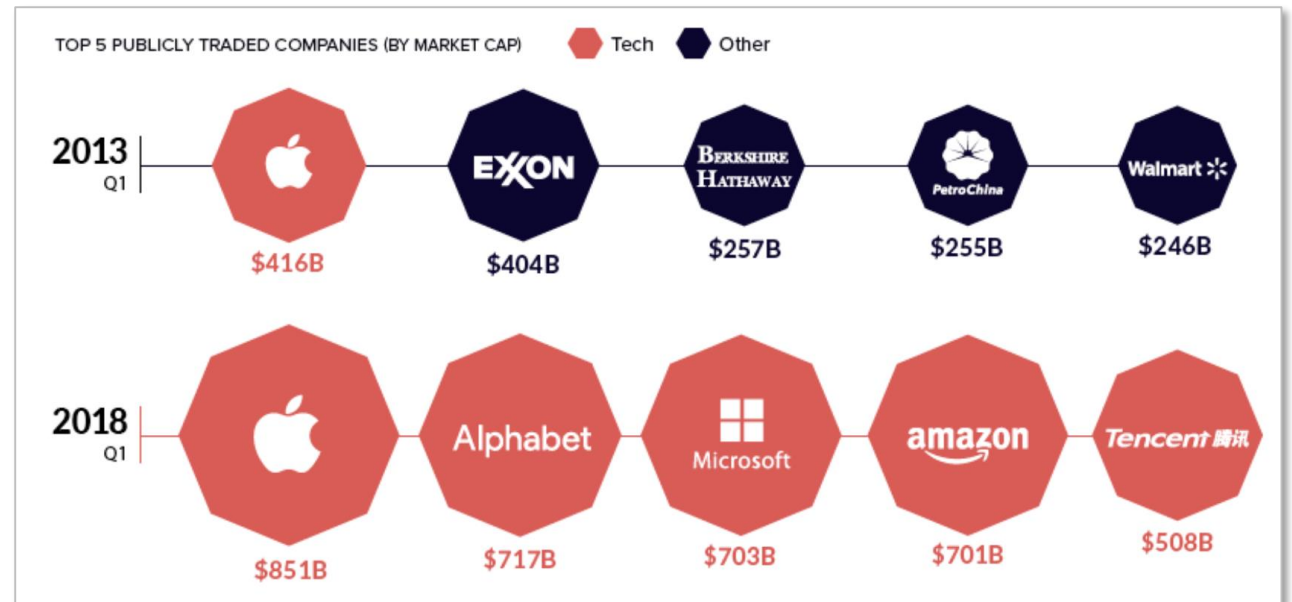
- “For most of the history of business, the world’s leading companies have been industrially-focused...”
- ...But today’s business reality is very different. We live in a world of bytes – and for the first time technology and commerce have collided in a way that **makes data far more valuable than physical, tangible objects.**
- The best place to see this is in how the market values businesses.”¹

Product Focus



Data Focus

WORLD
ECONOMIC
FORUM



¹ Oct 15, 2018, World Economic Forum, “These are the 8 major forces shaping the future of the global economy”

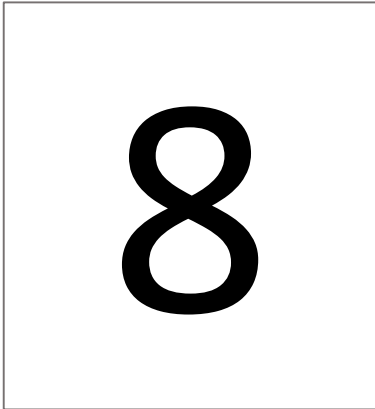
The World Economic Forum sees today’s economy as driven by **Data**, not Goods & Services

Digital Transformation is a Key Driver

The majority of our customers and prospects are **focusing their Data Management efforts in support of Digital Transformation.**

This is consistent across all regions:

- North America
- Latin America
- Europe & UK
- Asia Pacific



8

**Digital
Transformation**



10

**All Data
Management
Initiatives**

8 out of 10 of Global Data Strategy's customers and prospects are engaged in Digital Transformation

Are Data Models Still Relevant?

Many of the “tried and true” approaches that had been considered “old school” are seeing a resurgence.



“It does look similar—but this one is powered by Hadoop”

Source: TimoElliott.com

Data Models Tell a Story

What impact does the data model have on the business?

- Digital Transformation is as much about culture and organizational change as about technical innovation
- Key to success is understanding the impact on:
 - Customer Experience & Customer Journey
 - Organizational Change
- In addition to technical innovation & change
- **Data is a key foundation for both business and technical change.**

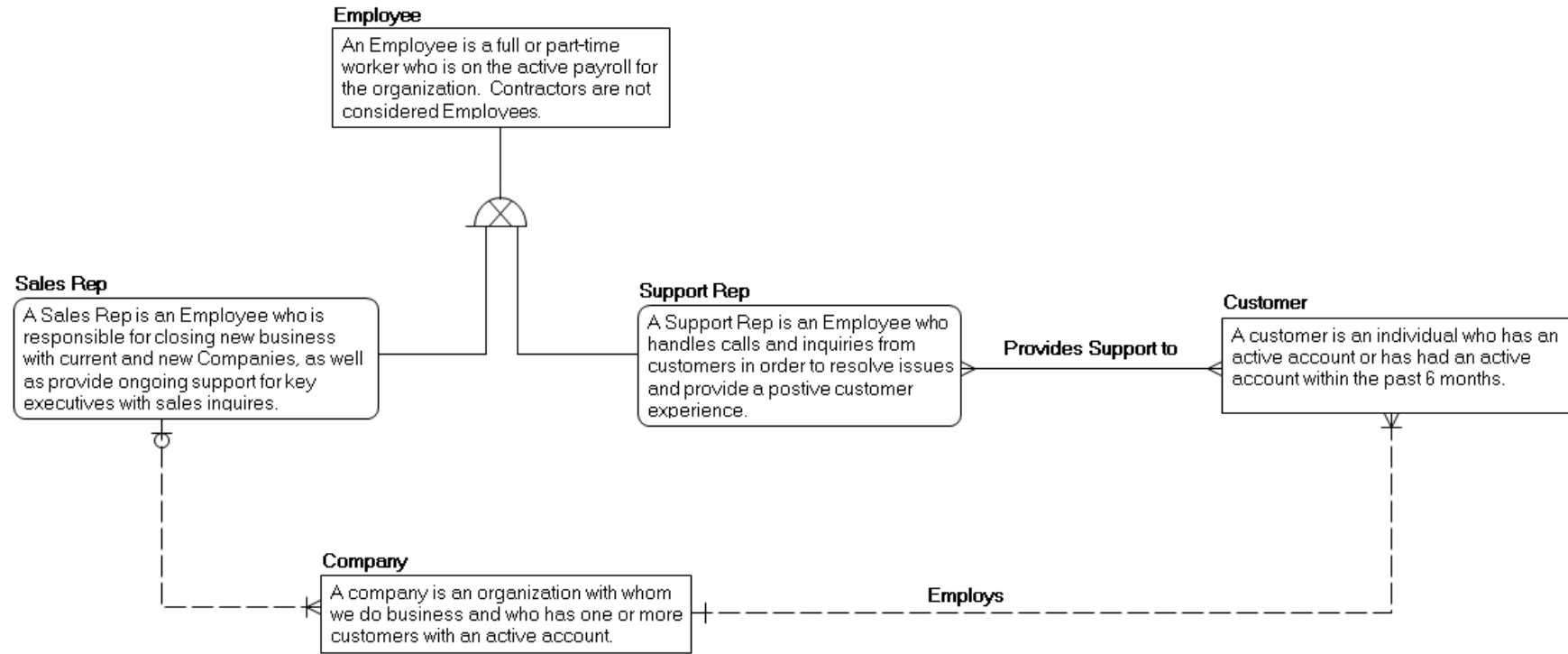
Data Model Tell a Story



Business Data Model (Conceptual)

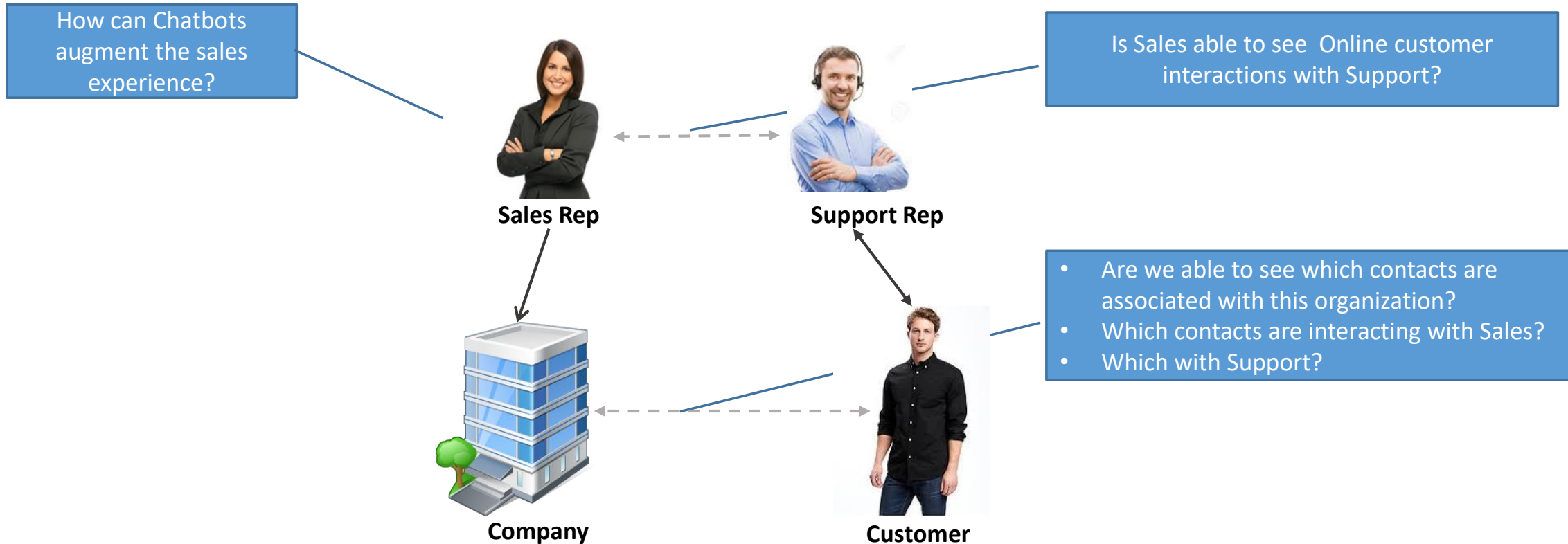
- Communication & definition of core data concepts & their definitions

- A business data model provides core **definitions** of key data objects.
- It also shows key **relationships** between data objects.
- Even a simple diagram as the one on the right can tell a powerful “story”
.... And uncover key **business issues and opportunities.**



Business Data Model (Conceptual)

- Including a graphical version of a data model is often a helpful way to tell the “story”



A Picture is worth a thousand words.

Levels of Data Models

Audience

Purpose

Business Stakeholders
Data Architects

Organization & Scoping of main
business domain areas

Enterprise
Subject Areas

Business Stakeholders
Data Architects

Communication & Definition of
Business Concepts & Rules

Conceptual
Business Concepts

Data Architects
Business Analysts

Clarification & Detail
of Business Rules &
Data Structures

Logical
Data Entities

DBAs
Developers

Technical
Implementation on
a Physical Database

Physical
Physical Tables



A little data modeling up-front ... prevents headaches down the road

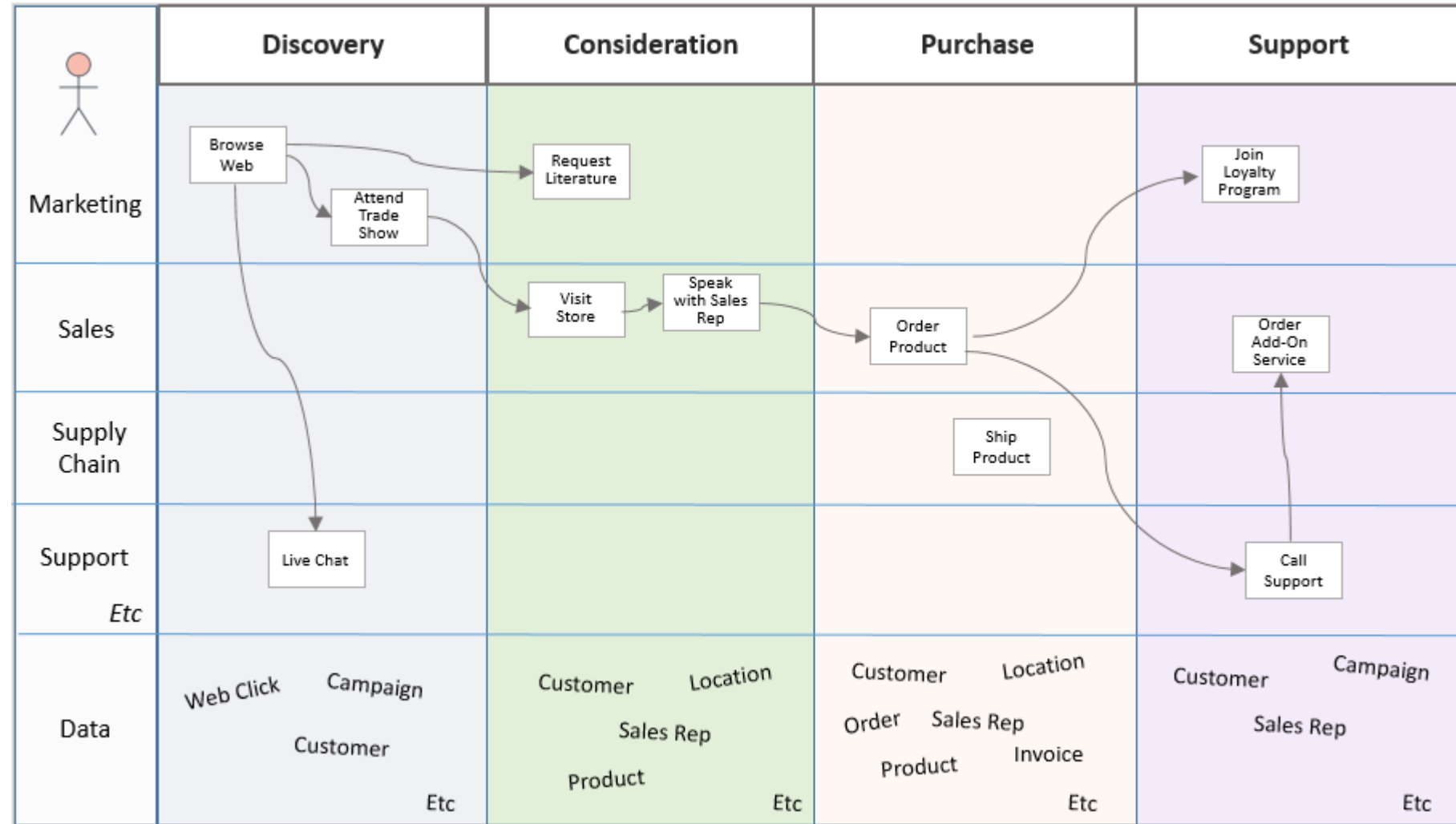
- It's often tempting to skip data modeling documentation because it's "faster"
- But...long-term, it's ultimately longer as errors and inconsistencies need to be fixed as a result.

"If you don't have time to do it right, do you have time to do it again?"



Customer Journey Map

- A customer journey map outlines key phases of the customer in their “journey”.
- They are similar to a process model, but with a different focus & perspective.
- Creating a data overlay is a helpful way to see the key data touched at each point in the journey.
- Journey maps can be created for other industries as well, e.g. Student, Patient, etc.



Case Studies: It Works



Digital Transformation through Data Architecture & Governance

Data Transformation Driving Digital Business Transformation

- A major international building materials company is undertaking a Digital Transformation effort worldwide.
 - Moving from a Product-centric to a Customer-centric model
 - Transforming from a Traditional to Digital business model
 - Exploring Data Monetization initiatives to expand its market portfolio
- Data Governance was used to form global “Data Evolution Teams” focused on Business Value
 - Cross-functional business teams to drive business process & cultural change
 - Modernizing data platform architecture for real-time, cloud-based data availability
 - Technical Data Governance, data models, metadata, and data lineage
 - Agile software development efficiency and quality
- Interactive workshops with Business & Technical Stakeholders
 - Agile Stories
 - Data Models
 - Customer Journey Maps
 - “Hands-on” Post-it Notes & Whiteboarding



Optimizing Online Customer Experience through Data Architecture

Using Data to Build Customer Loyalty & Increase Sales

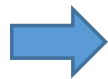
- A major Retail Vendor wanted to become a data-driven company
 - Enhancing the customer experience by **mapping the Customer Journey to the Data Lifecycle**
 - Using **IoT product data to improve product design & customer service**
 - **Optimizing product supply chain & delivery**
- Data Architecture was Key to Improving the Online Customer Experience
 - **Data Models** to understand key data objects & their relationships -> “Can a customer have more than one email?”
 - **Data Flow Diagrams** to understand how data flows across the organization & the customer journey
 - **Process Models** to map how data is used across the customer journey

I never thought I'd use the words “Data Flow Diagram” – I love it!

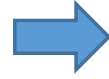
- Chief Marketing Officer



Customer Discovery & Purchase



Product Delivery & Tracking



Customer Support



Product Usage Tracking



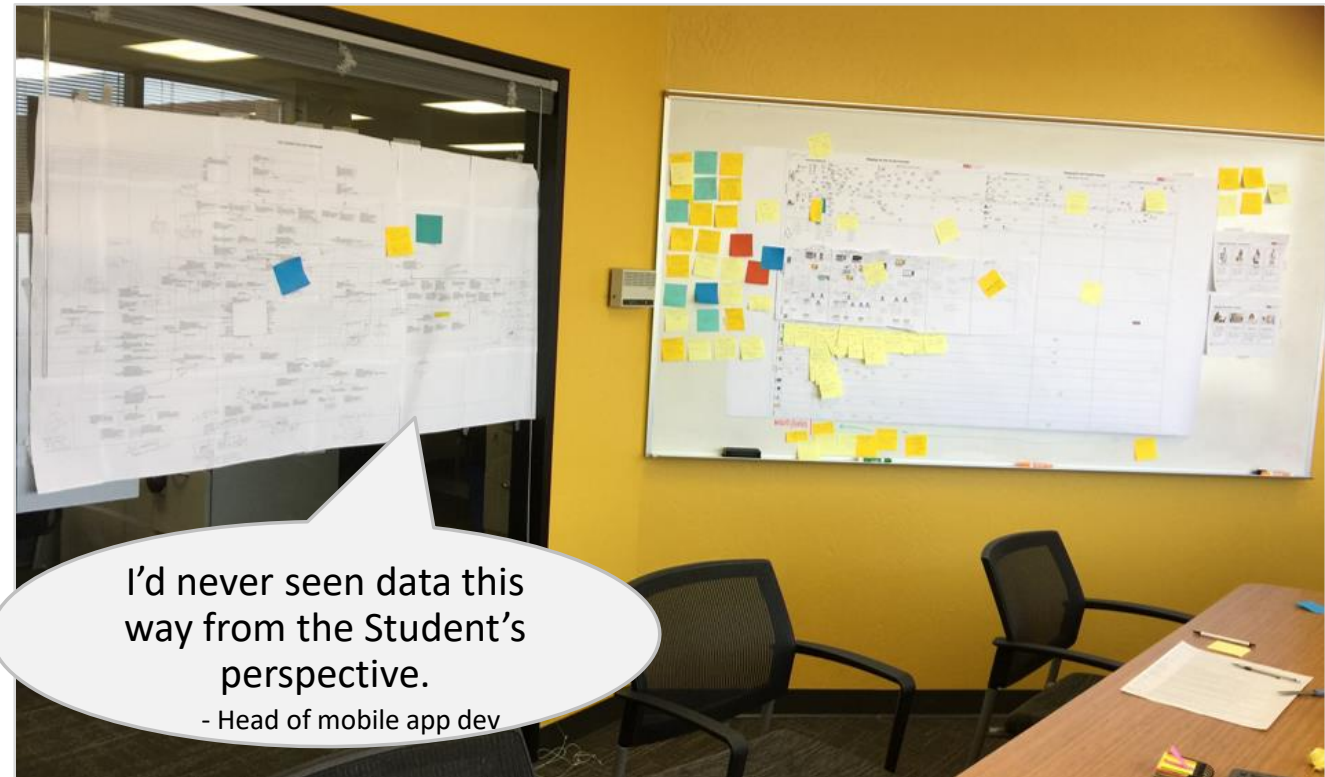
Product Development

Understanding the Student Journey through Data

Mapping the Student Journey across Digital and In-Person Interaction

A major US University has a focus on **improving student success** for a wide range of demographics.

- Key to success is **engaging with students across multiple communication venues** including:
 - mobile, web, IoT,
 - ...and good-old-fashioned in-person interaction
- Part of the effort was identifying key student personas and tackling the question of **“What is a Student”**?
 - “Traditional” on-campus 18-20 year old
 - Lifelong learner
 - Single parent
 - Etc.
- **Key data entities were mapped to the Student Journey** to highlight where the best focus should be



I'd never seen data this way from the Student's perspective.

- Head of mobile app dev

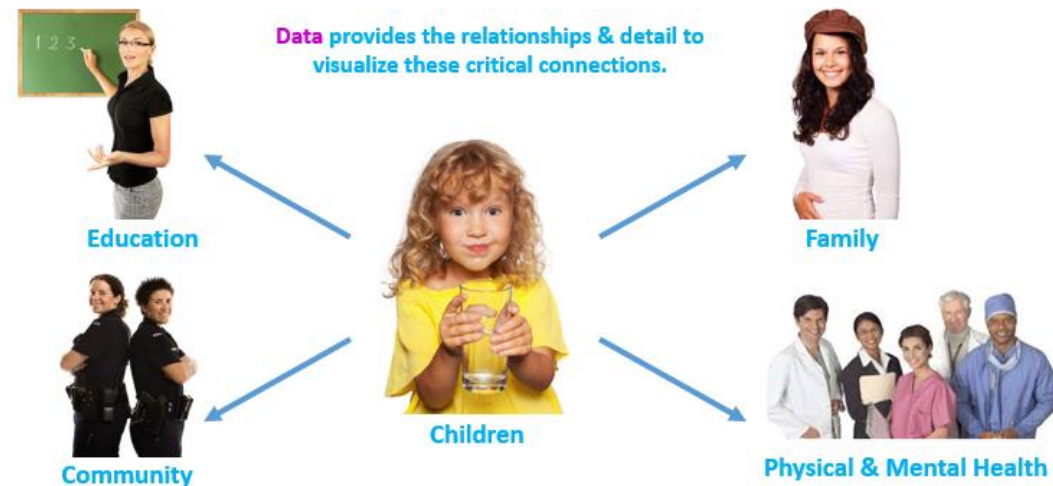
Data models were created & mapped to the Student Journey

Starfish Family Services

Using Data to Improve the Lives of Children



- A local Head Start Program was looking to improve the lives of children & families through data, through a holistic, integrated view of the individual:
 - Physical Health
 - Mental Health
 - Education
 - Family Support
 - Community Support
 - Etc.
- Data-Driven Digital Transformation & Automation is key to their long-term plan.
- **Data Models were used with Early Education & Behavioral Health Staff** to understand how to achieve a full view of children & families across all interactions – in person and digital
- Starfish recently won an award for “Best Managed Nonprofit” in the Detroit areas based on their advanced use of data to support families.



I love this model – it’s such an elegant way to describe our organization.

- Early Childhood Social Worker



Summary

Mapping the Student Journey

- Digital Transformation is as much about culture and organizational change as a technical innovation.
- Data models are key to supporting this transformational change as they span both business and technology
- Using visual modeling combined with newer design thinking techniques can spur innovation (e.g. Customer Journey Maps)
- Data models are key to understanding the organization's current state and its data roadmap for the future.

About Global Data Strategy, Ltd

Data-Driven Business Transformation

- **Global Data Strategy is an international information management consulting company** that specializes in the alignment of business drivers with data-centric technology.
- **Our passion is data**, and helping organizations enrich their business opportunities through data and information.
- Our core values center around providing solutions that are:
 - **Business-Driven:** We put the needs of your business first, before we look at any technology solution.
 - **Clear & Relevant:** We provide clear explanations using real-world examples.
 - **Customized & Right-Sized:** Our implementations are based on the unique needs of your organization's size, corporate culture, and geography.
 - **High Quality & Technically Precise:** We pride ourselves in excellence of execution, with years of technical expertise in the industry.

Business Strategy



Aligned With



Data Strategy



Visit www.globaldatastrategy.com for more information

Questions?

- Thoughts? Ideas?

