



# Digital Systems

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Week 3

**FOX**  
**MIS**

# ROADMAP

START

## Week 1: Introduction & Systems Analysis

- Course Description
- Systems Thinking

## Week 1: Introduction to Process Mapping

- Systems & Processes
- Swim Lane Diagrams
- Assignments due::
- Course video intro
- Max Labs Pre-Flight
- Proctorio Practice Quiz

## Week 2: Data Modeling & ERD

- Max Labs 1A/1B- due
- Max Labs 2A/2B due

## Week 2:

### Exam #1

1/29 – 1/31: Exam Availability

## Week 4 :

### Exam #2

2/12-2/14 Exam Availability

## Week 4: Cybersecurity & AI

- Protection Protocols
- Artificial Intelligence
- Lean IT #2 due
- Cyber Security due

## Week 4: Platforms & Digital Business Models

- API's
- Cloud

## Week 3: Information Systems

- ERP & CRM
- Data Analytics & SCM
- Max Labs 3a/3b due
- Lean IT #1 due

## Week 5: JavaScript Unit #1 & 2

- Hello World,
- Variables
- Operator types
- Strings

SoloLearn Coding due

## Week 6: JavaScript Unit #3&4

- Logical Operators
- Conditional Types
- Intro to Loops
- While and Do
- Coding Challenges \*3) due
- Proctorio Coding Practice due

## Week 7: HTML & CSS

- Coding Assignment -due

## Week 7:

### Exam #3

3/5 – 3/7: Exam Availability

FINISH

## Business Systems Innovation Labs

### Lab 3a Pre-flight Checklist



#### "Need Superpowers? Go Cyborg w/SF.....8-0"

In this episode, Max's job is getting out of control and she can't keep up. Fortunately, she figures out how to build business rules into SF to make it help do the work. That's *process automation*—how you make the computer do the busywork so your job is *scalable*. She also uses Customer Relationship Management (CRM) to better deal with customers (VCs & Angels, in her case), even when there's tons!

Prep: What do you need to start?

# Max Labs 3a & 3b

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Due by EOD Sunday – LAST MaxLab!

**FOX**  
**MIS**

# Max Labs – 3a Discussion

## Data Driven Humans = Cyborg?

- Technology Awareness
- Managing Data
  - Scalability
  - Automation
  - Templates

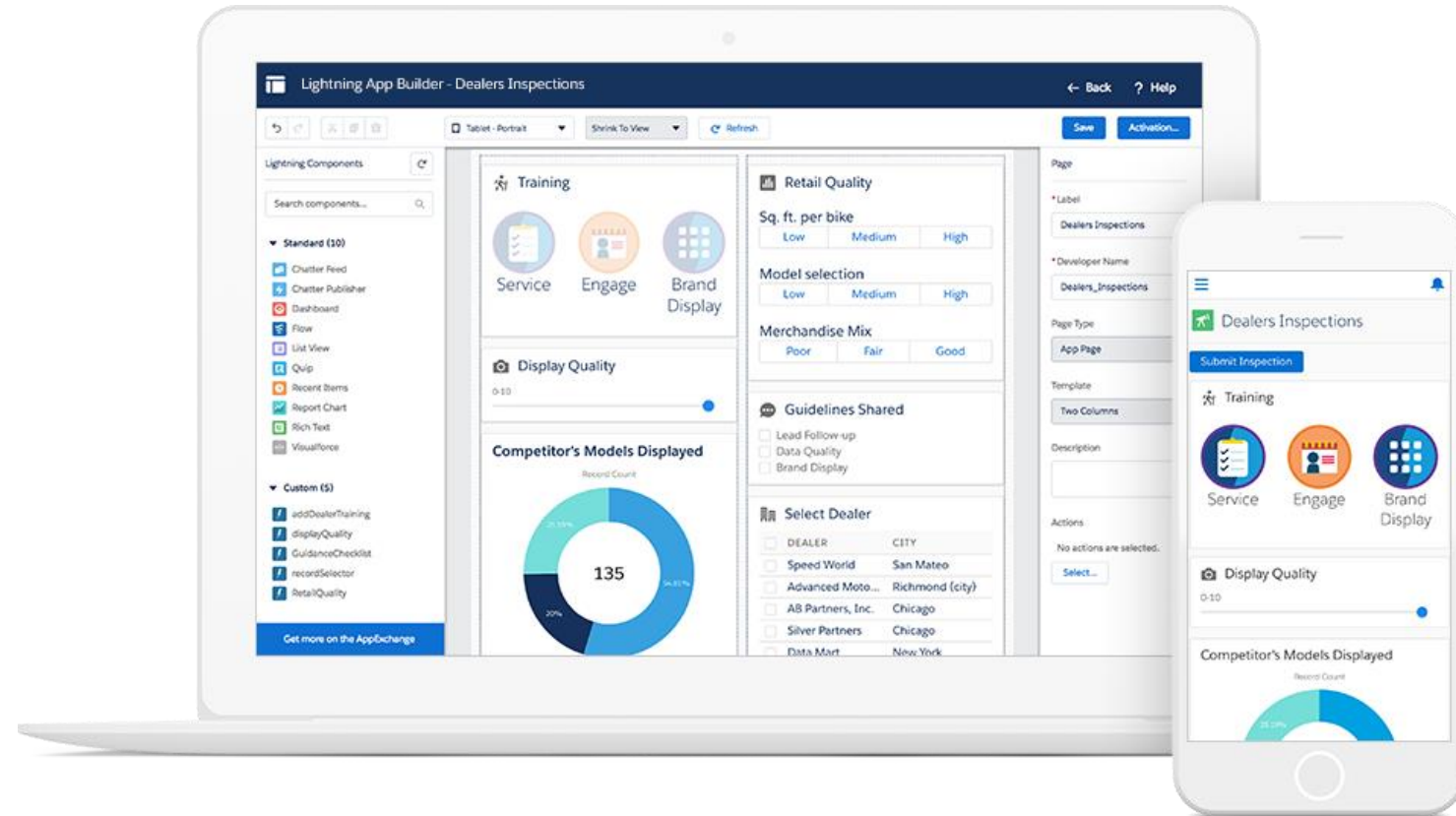


Source: <https://thumbor.forbes.com/thumbor/960x0/https%3A%2F%2Fspecials-images.forbesimg.com%2Fdam%2Fimageserve%2F935226186%2F960x0.jpg%3Ffit%3Dscale>

# Max Labs – 3a Discussion

## Platform Tools

- Programming
- Implementing Business Rules
- Automation



Source: <https://www.salesforce.com/products/platform/lightning/>

# Max Labs – 3a Discussion

## Cyborg CRM?

- Business Processes
- Platform Features
  - Managing Communications
  - Process Automation



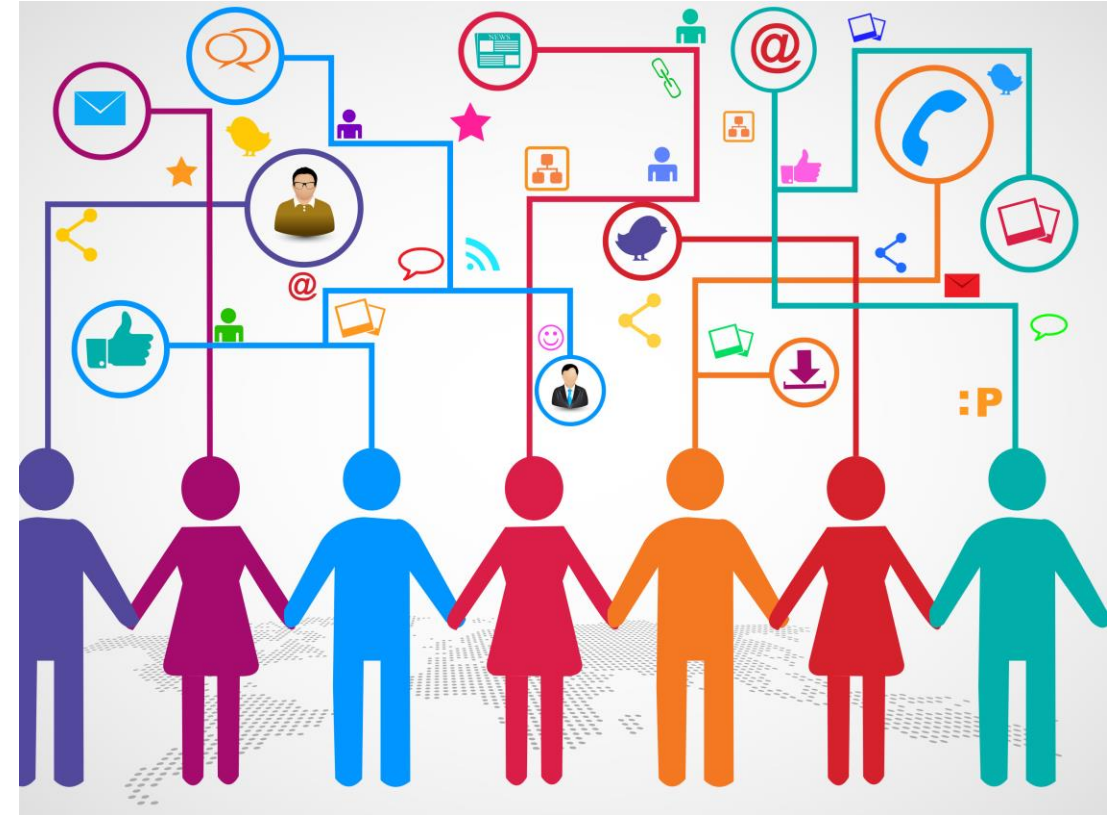
Source: <https://designerd.info/features/neil-harbisson-the-art-of-being-a-cyborg/>



# Max Labs – 3b Discussion

# “Social Business”

- Internal vs. External
- Communication Tools
- Enterprise Environment
- Practice Professionalism

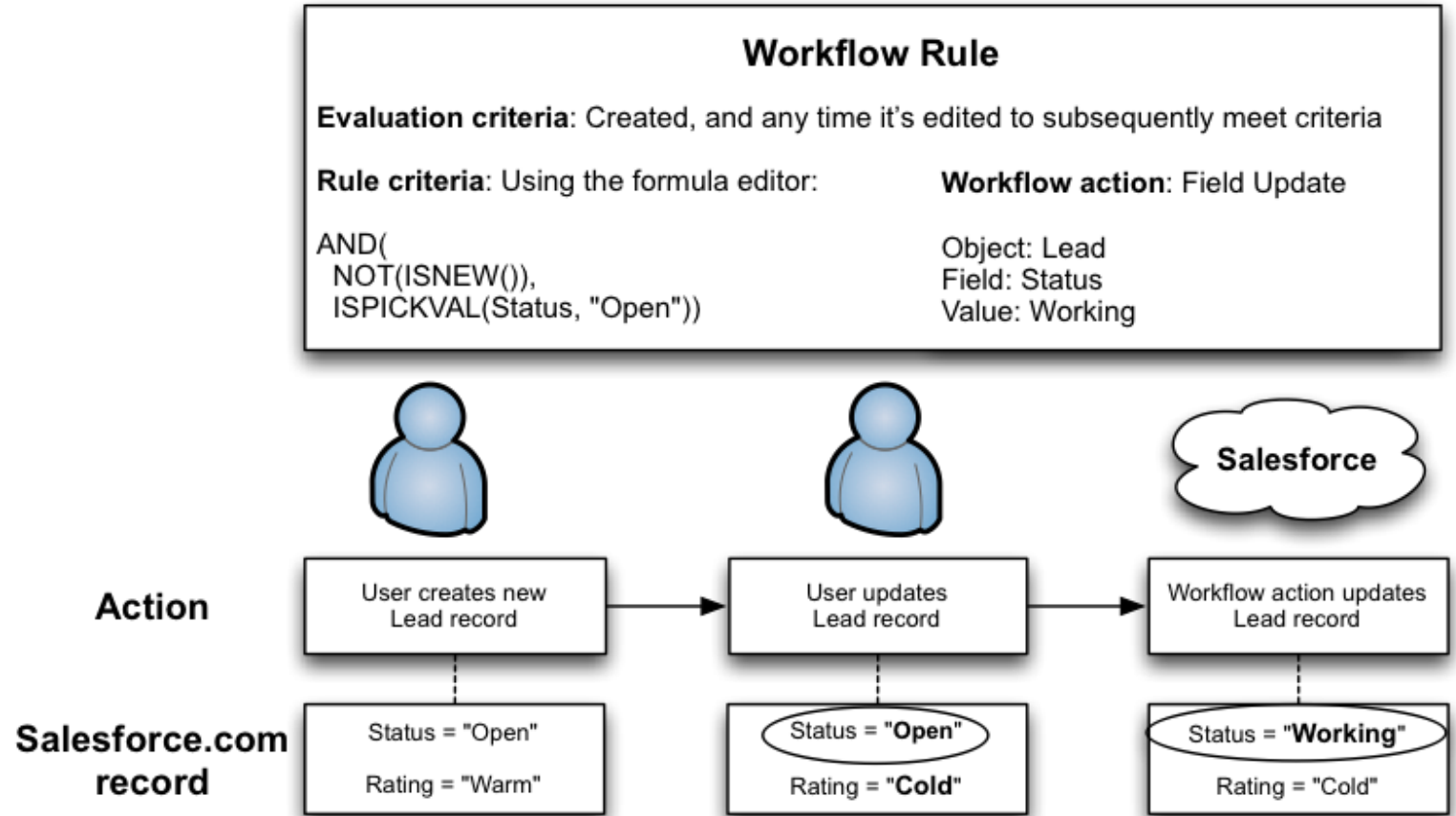


Source: [https://joannemccall.com/wp-content/uploads/2017/02/social-network\\_110003543-012814-int.jpg](https://joannemccall.com/wp-content/uploads/2017/02/social-network_110003543-012814-int.jpg)

# Max Labs – 3b Discussion

## Workflows

- Task Sequences
- Rule Creation
- Assignment



Source: <https://c1.sfdcstatic.com/content/dam/blogs/us/May2016/Picture15.png>



# Max Labs – 3b Discussion

## Email Messaging

- Creating forms & templates
- Auto-response
- Configuration

Available Merge Fields  
Select Field Type  
Lead Fields  
Select Field  
Annual Revenue  
Copy Merge Field Value  
(!Lead.AnnualRevenue)  
Copy and paste the merge field value into your template below.

### Step 2. Text Email Template: New Template

Step 2 of 2

Previous Save Cancel

#### Email Template Information

! = Required Information

Folder Unfiled Public Email Templates

Available For Use ☐

Email Template Name Test

Template Unique Name Test

Encoding General US & Western Europe (ISO-8859-1, ISO-LATIN-1)

Description

Subject test

Email Body (!Lead.AnnualRevenue)

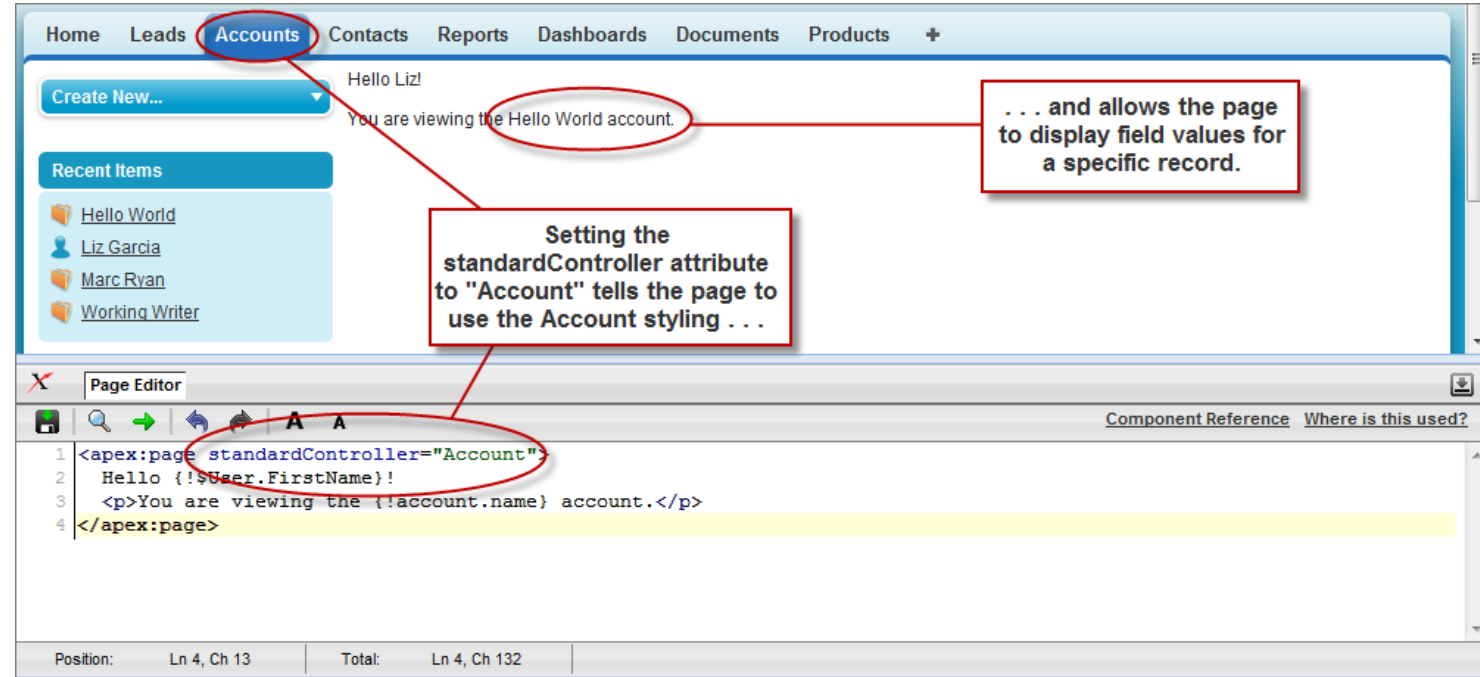
Previous Save Cancel

Source: <https://developer.salesforce.com/forums/servlet/rtalImage?eid=906F0000000D6Js&feoid=Body&refid=0EMF0000000TjgE>

# Max Labs – 3b Discussion

## Coding – It's as simple as that!

- Display values
- Create Attributes
- Configuration
- API's



Source: [https://developer.salesforce.com/docs/atlas.en-us.pages.meta/pages/pages\\_quick\\_start\\_display\\_field\\_values.htm](https://developer.salesforce.com/docs/atlas.en-us.pages.meta/pages/pages_quick_start_display_field_values.htm)

# Max Labs – 3b Discussion

## “The Cloud”

- API's
- PAAS
- Automation
- Coding
  - HTML



Source: [https://i1.wp.com/www.startupmgzn.com/english/wp-content/uploads/2018/06/shutterstock\\_710262001.jpg?resize=740%2C494&ssl=1](https://i1.wp.com/www.startupmgzn.com/english/wp-content/uploads/2018/06/shutterstock_710262001.jpg?resize=740%2C494&ssl=1)



# Max Labs – 3b Discussion

## Human/Cyborg – Process Improvement

- Organizational Benefits?
  - Better/Faster/Smarter
  - Leveraging Technology
  - Scalability



Source: <https://geospatialmedia.s3.amazonaws.com/wp-content/uploads/2019/01/AI-1.jpg>

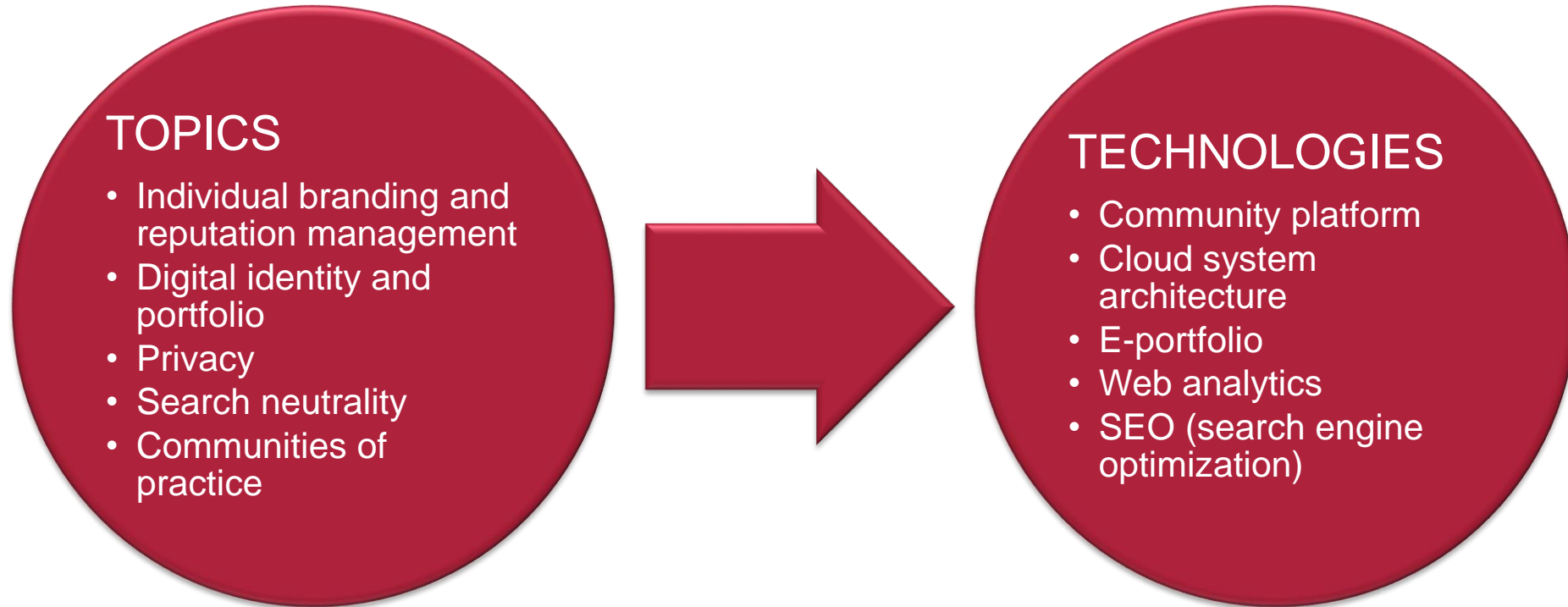
# Learn IT! #1

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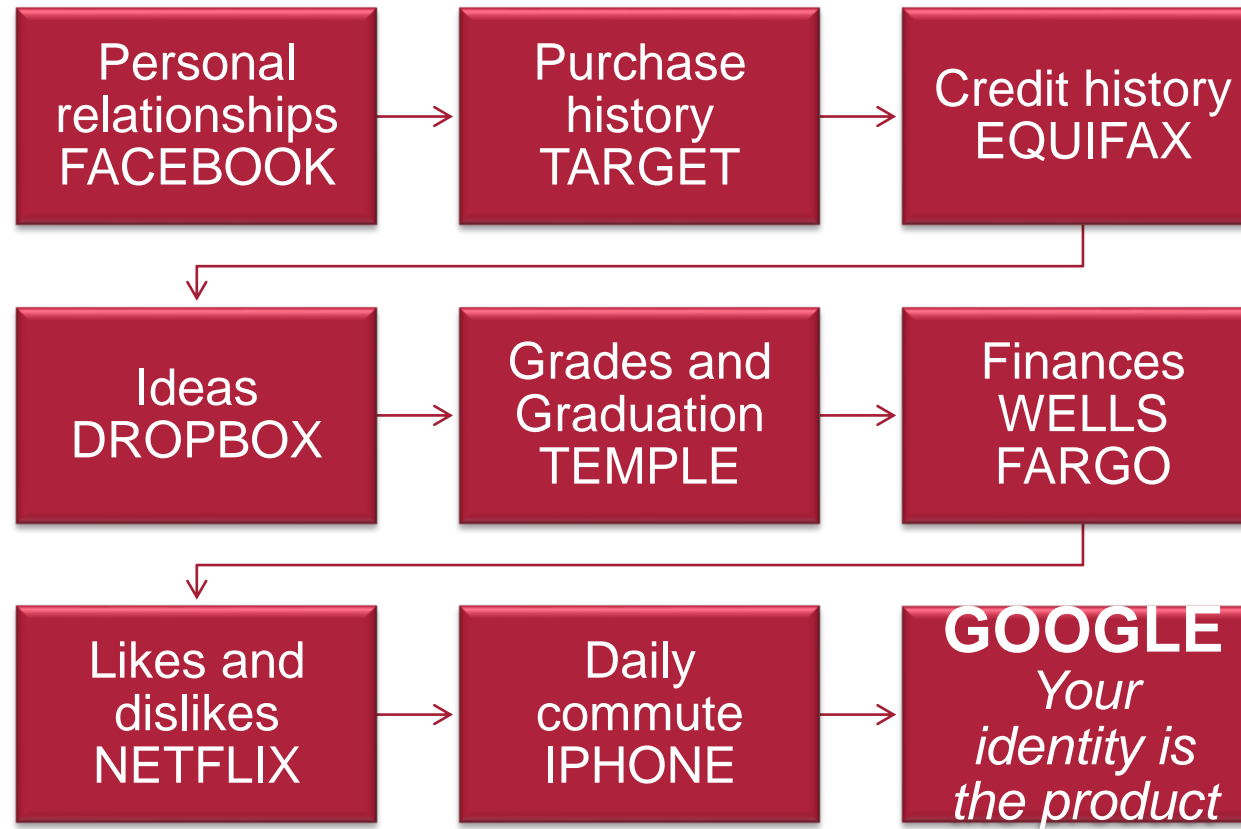
Due by EOD Sunday

**FOX**  
**MIS**

# Learning Goals



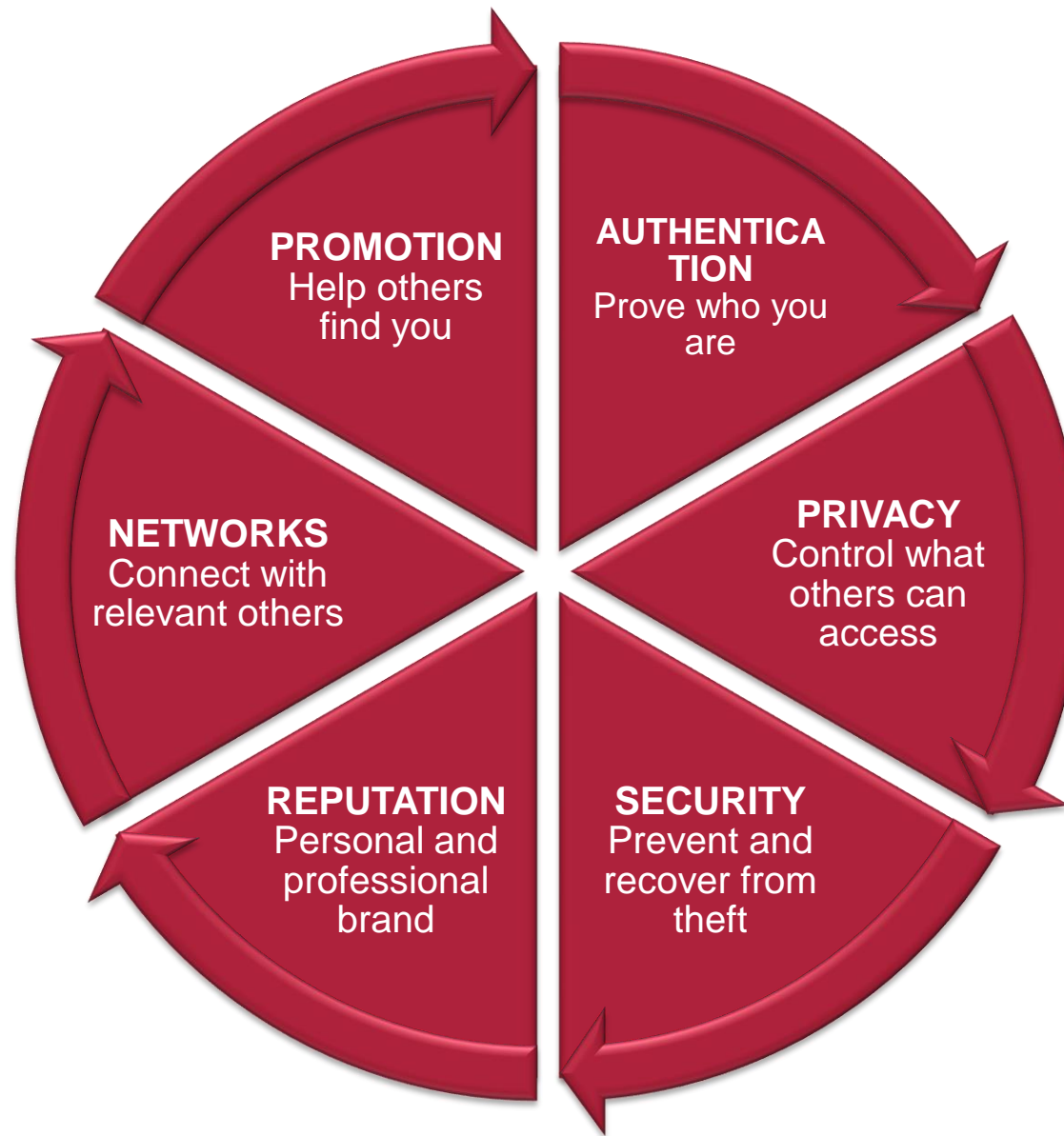
# What is a digital identity?



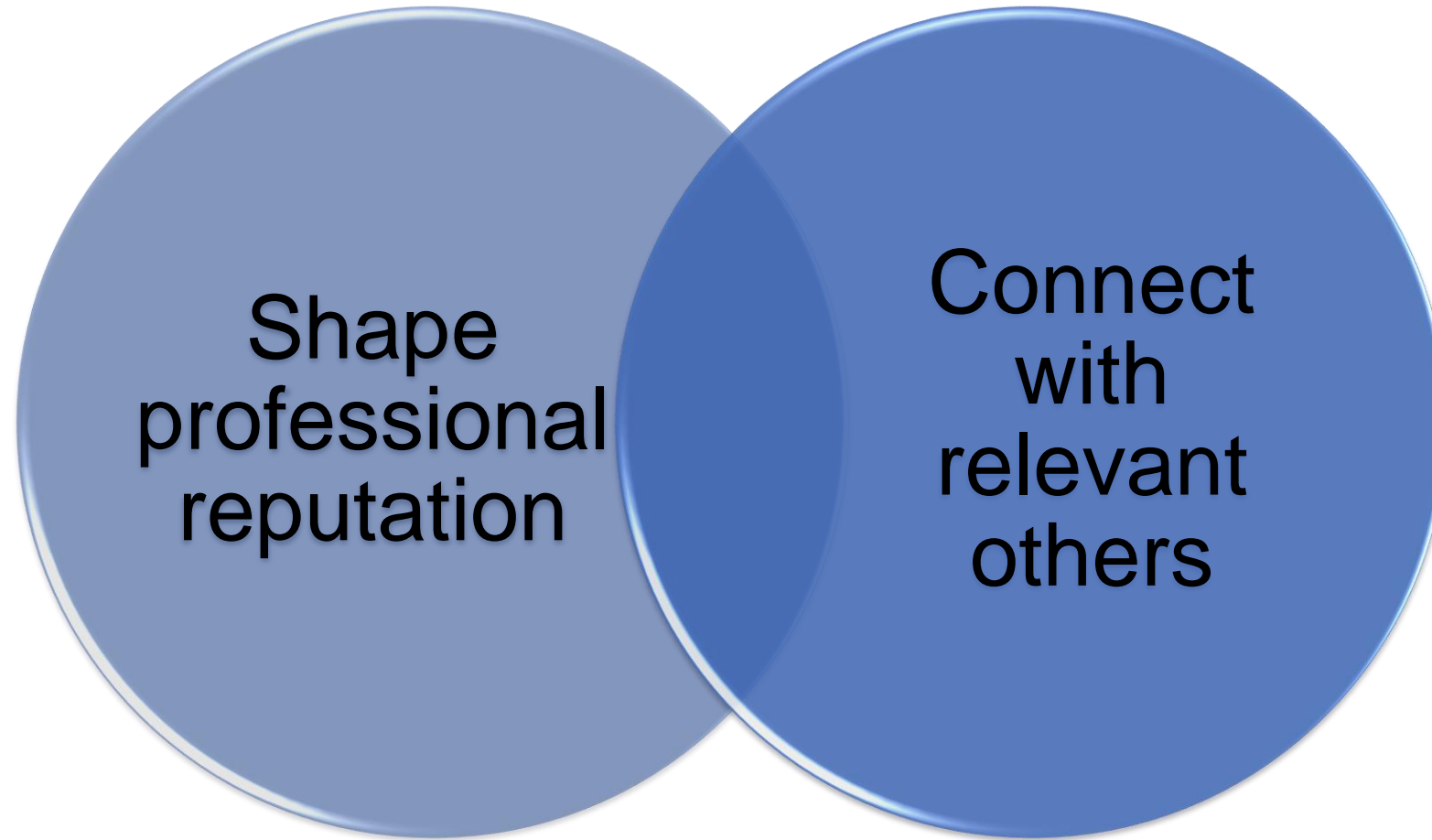
Source: The next revolution will be reclaiming your digital identity by Nik Milanovic, <https://techcrunch.com/2017/10/17/the-next-revolution-will-be-reclaiming-your-digital-identity/>



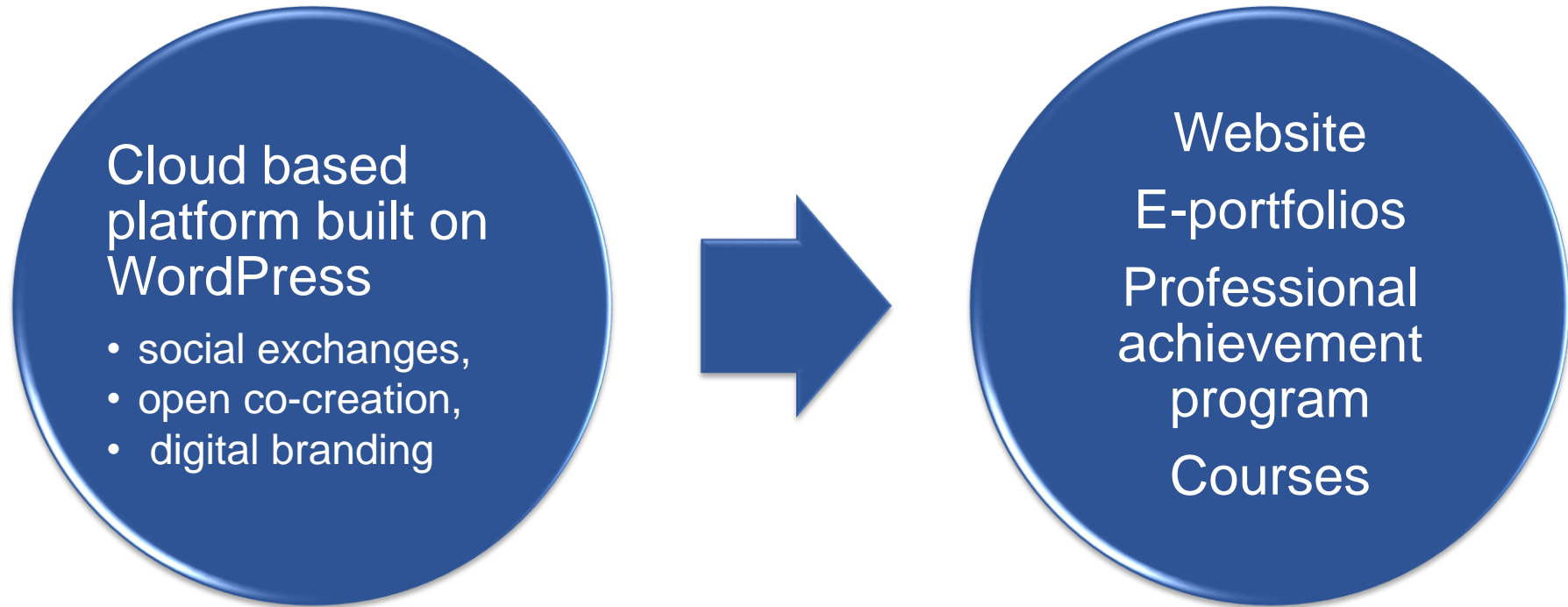
# Digital identity management



# Active digital identity management



# Community Platform



- Only platform that integrates web, professional development & coursework.
- Proprietary to the nationally ranked Fox School's MIS department.

# Digital Identity Management Assignment

**Base**

Name	Josie Smith
Major	BBA MIS
Minor	Legal Studies
Hometown	Cherry Hill, NJ
Temple University affiliation	Current student

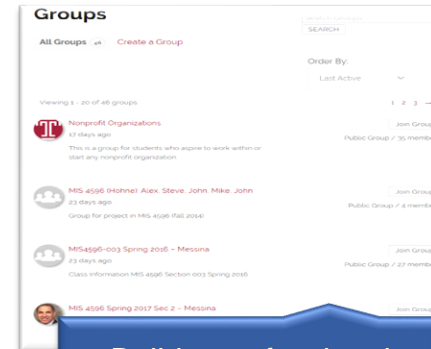
**Professional Details**

Current employment status	Not employed
Current	

Digital identity & profile



Digital portfolio & E-portfolio



Build a professional network



Assess with analytics



Professional achievement program (MIS majors only)

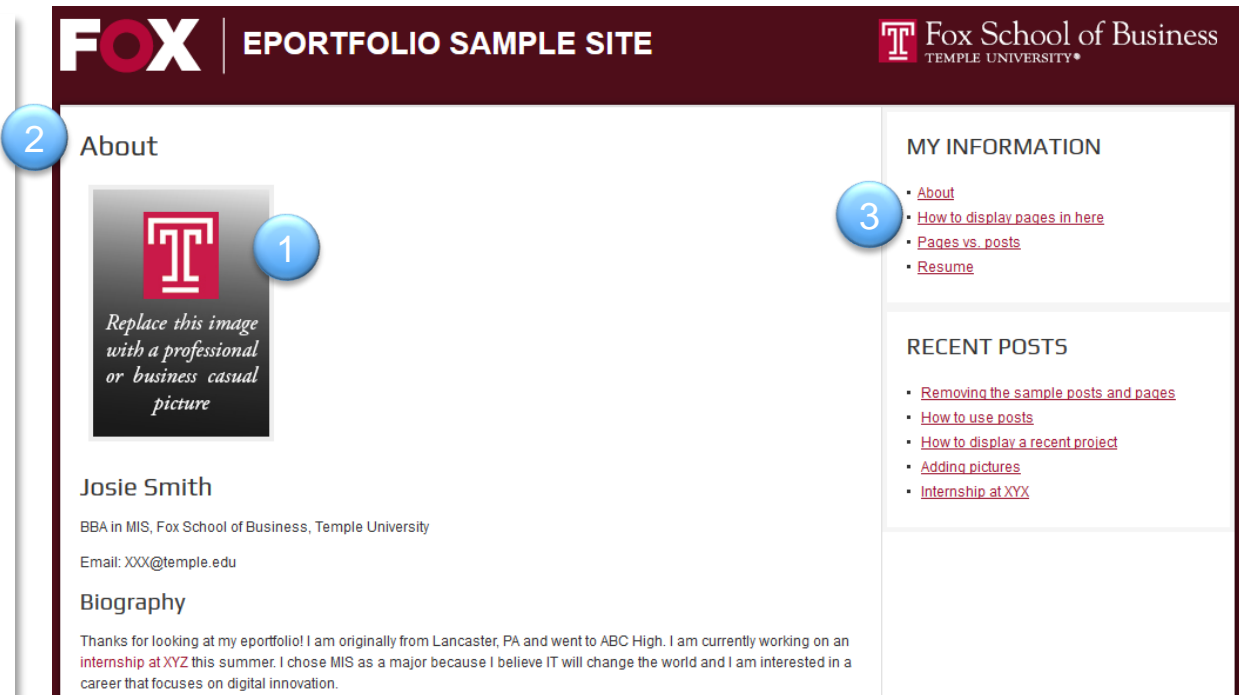
# MIS major e-portfolio design requirements

1. Student e-portfolio
2. Professional picture
3. Profile fields
4. About me (home) page
5. Coursework
6. Experience and/or Interests
7. Resume as a PDF



# Fox major e-portfolio design requirements

1. Professional picture
2. About me (home) page
3. Three pages including “My Interests”
4. Remove all extra posts and pages



# E-portfolio tips

## DO'S

- Help Google: Include full name in the site title.
- Sample work. This is your digital portfolio!
- Describe work experience.
- Involvement in non-profits.
- Pictures of professional experiences.
- Proofread
- Google and Mobile friendly formatting.

## DON'TS

- Inappropriate photos
- Inappropriate content
- Private information
- Broken hyperlinks
- Word documents
- Don't password protect or close the site.
- Don't use custom formatting



Learn IT! #1



Part 1. ePortfolio – Ngoc Nathan Pham

ABOUT ME

MY INTERESTS

WORK

Ngoc Nathan Pham

Major: BBA MIS

Graduation: May 2019

Connect with Me

Official Professional Achievement badge awarded by the Department of Management Information Systems

Click here to validate the recipient

Professional Achievements

AWARDS4+

WORK EXPERIENCE3+

PROJECTS2+

PARTICIPATION21+

ATTENDANCE5+

Major: Management Information Systems

Minor: Finance

Graduation: May 2019

Cumulative GPA: 4.0/4.0

My name is Ngoc “Nathan” Pham, a “sociable nerd” who loves connecting with people, learning constantly, and exploring technologies every day. I’m finishing my undergraduate degree at Fox School of Business, Temple University (Philadelphia, PA).

I have had experience in Risk Advisory, Data Analytics (R, Excel, Tableau, and SQL), PHP/JavaScript Web Application Development, Equity Research, Investment Banking, and Commercial Banking. This past summer, I worked as a **Technology Risk Advisory Intern** at Deloitte in Philadelphia.

At Temple, I love helping people through my role as a Peer Mentor for 141 Temple freshmen from 11 countries over the past 3 years. I also enjoy learning, researching, and reflecting on something new every day.

My long-term career goal is to succeed in management consulting to help organizations and individuals achieve their potential.

Thank you for visiting my site. Feel free to explore more about my professional and personal interests. My resume and LinkedIn profile are listed below:

Nathan Pham’s Resume

Nathan Pham’s LinkedIn profile

Leave a Reply

Logged in as Brien Coghlan. Log out?

Comment



# Digital Systems

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5.1 Information Systems Part I – CRM & ERP

A yellow rectangular logo with the word 'FOX' in white, bold, sans-serif font, and 'MIS' in white, bold, sans-serif font below it.

**FOX**  
**MIS**

# What is ERP?

## Enterprise Resource Planning

- Software or a System that:
  - Integrates functions
  - Streamlines processes
  - Manage core business

**What problems could be solved by an ERP?**



Source: <https://erpinnews.com/5-enterprise-resource-planning-erp-trends-to-watch-in-2019>

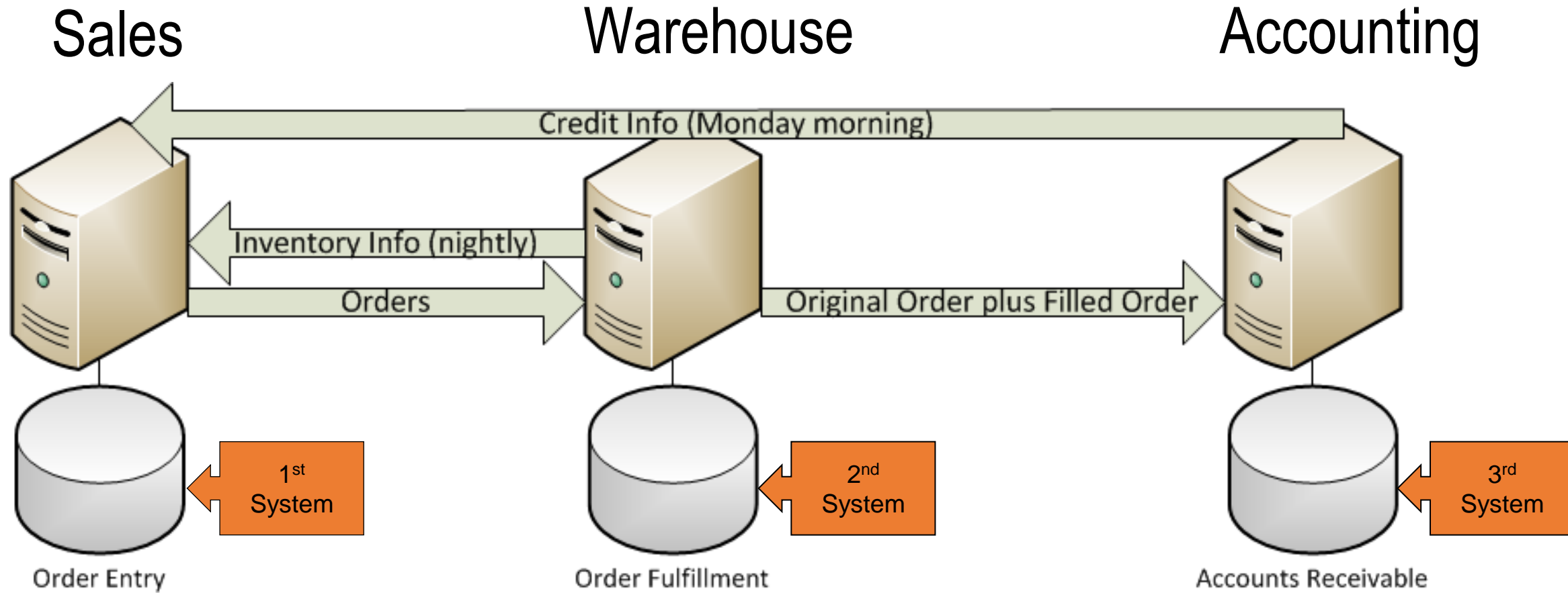
# ERP – example TU Portal: banner

## Database with a holistic vision!

- Who uses banner?
- What functions does banner serve for each user?
- What are the benefits to the University?

The screenshot displays the TU Portal banner for Temple University. At the top, there is a weather bar showing London (57°F), Rome (79°F), and Philadelphia (78°F). The TU Portal logo and the date/time (June 7, 2019 4:17 PM) are in the top right corner, along with a 'Log Out' button. Below the header is a navigation bar with tabs for 'PERSONAL INFORMATION', 'STUDENT', 'FACULTY SERVICES', and 'EMPLOYEE'. On the right side of the banner, there are links for 'ACCESSIBILITY', 'SITE MAP', 'HELP', and 'EXIT'. The main content area is titled 'Main Menu' and lists four categories: 'Personal Information' (View and update: address, phone, emergency contact and TUALert information), 'Student' (Apply for Admission, Register, View your academic records), 'Faculty and Advisors' (Enter Grades and Registration Overrides, View Class Lists and Student Information), and 'Employee' (Review benefits and deductions, pay information, tax forms, leave activity, and enter a Leave of Absence request). At the bottom, it shows 'RELEASE: 8.8.3', the copyright notice '© 2019 Ellucian Company L.P. and its affiliates.', and the Temple University logo with the text 'If asked by Client Services, this is server 6'.

# Legacy Systems

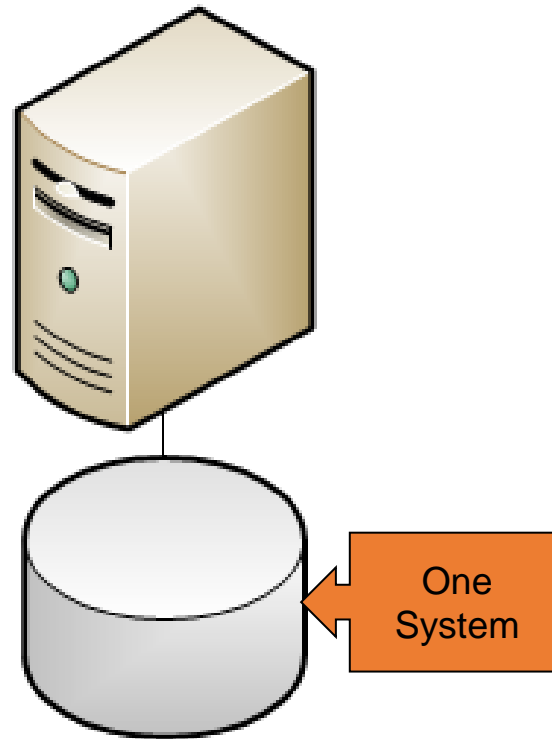


# Enterprise Systems

Sales + Warehouse + Accounting

## ERP analysis

- How many copies of data?
- What about decision making?
- What is eliminated?
- Client impact?





# ERP – Key Takeaways

## How does ERP create value?

- Integrated Database
  - **One copy of data**
- Collaboration
  - Improves decision making
- Flexibility & Mobility
  - Access anywhere/anytime
- Lowers costs



Source: <http://blog.pragtech.co.in/erp-business-success/>



# What is CRM?

## Customer Relationship Management

### Who Uses CRM?

- Sales
- Marketing
- HR
- Accounting
- Strategy



Source: <https://collectiveinnovation.com/the-art-of-customer-relationship-management/>

# What is CRM?

## Customer Service:

Have you experienced this? Why?

- Transferred 2 or more times
- Repeat Story
- Disconnected
- Hold time approximately...
  - Fantastic music

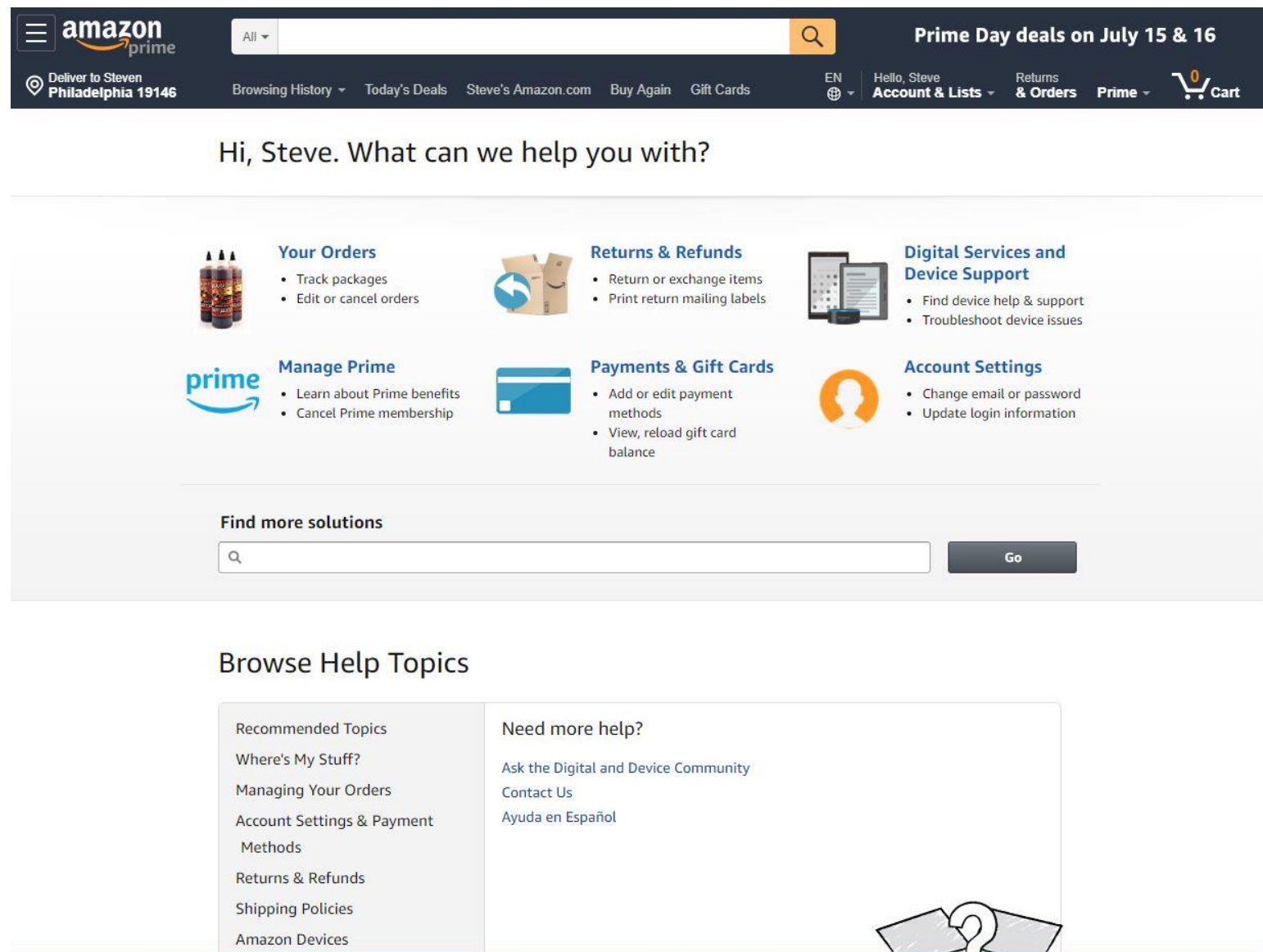


Source: <http://donthatethegeek.com/cellular-carriers-screwing-phones/>

# CRM Case Study:

## Amazon

- Data Collection
- Personal Storage
- Recommendations
- Support



The screenshot shows the Amazon Prime help page for a user named Steve. The header includes the Amazon Prime logo, a search bar, and navigation links for account and orders. The main content area is titled "Hi, Steve. What can we help you with?" and features six categories of help topics: Your Orders, Returns & Refunds, Digital Services and Device Support, Manage Prime, Payments & Gift Cards, and Account Settings. Each category has a list of specific help topics. Below these categories is a "Find more solutions" search bar. At the bottom, there is a "Browse Help Topics" section with a list of recommended topics and a "Need more help?" section with links to the Digital and Device Community, Contact Us, and Ayuda en Español.

**amazon prime**

Deliver to Steven Philadelphia 19146

Browsing History Today's Deals Steve's Amazon.com Buy Again Gift Cards

EN Hello, Steve Account & Lists Returns & Orders Prime Cart

Prime Day deals on July 15 & 16

Hi, Steve. What can we help you with?

**Your Orders**

- Track packages
- Edit or cancel orders

**Returns & Refunds**

- Return or exchange items
- Print return mailing labels

**Digital Services and Device Support**

- Find device help & support
- Troubleshoot device issues

**Manage Prime**

- Learn about Prime benefits
- Cancel Prime membership

**Payments & Gift Cards**

- Add or edit payment methods
- View, reload gift card balance

**Account Settings**

- Change email or password
- Update login information

Find more solutions

Browse Help Topics

Recommended Topics

- Where's My Stuff?
- Managing Your Orders
- Account Settings & Payment Methods
- Returns & Refunds
- Shipping Policies
- Amazon Devices

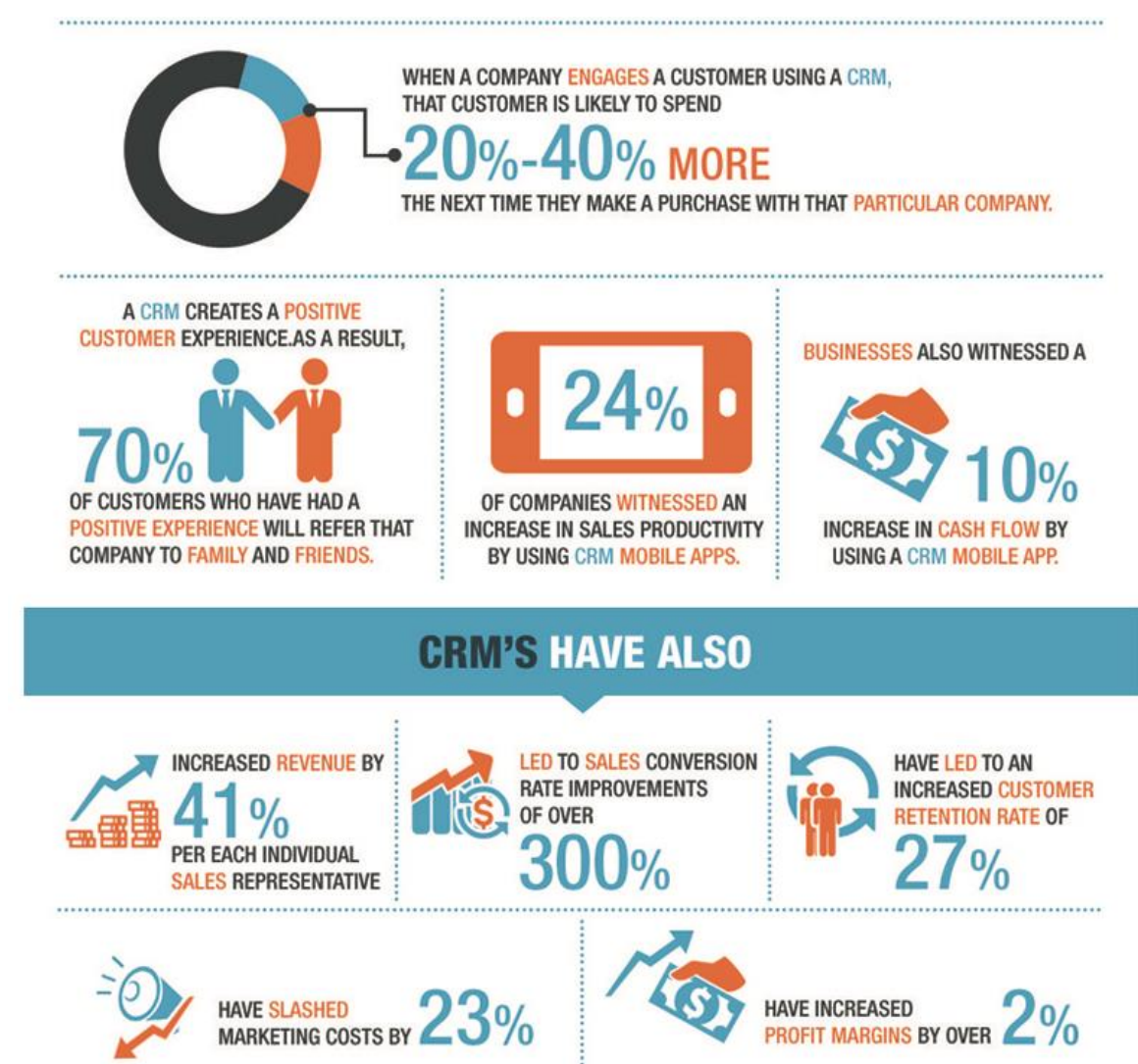
Need more help?

- Ask the Digital and Device Community
- Contact Us
- Ayuda en Español

Source: [https://www.amazon.com/gp/help/customer/display.html?nodeId=508510&ref\\_=nav\\_cs\\_help](https://www.amazon.com/gp/help/customer/display.html?nodeId=508510&ref_=nav_cs_help)

# Why purchase CRM?

- Do companies really need CRM?
- Why?
- What businesses would benefit?



Source: <https://devftw.com/top-15-crm-software-for-retailers/>

# Why purchase CRM?

## Customer Relationship Management

- CRM's track what kind of data?
- How do organizations use data?

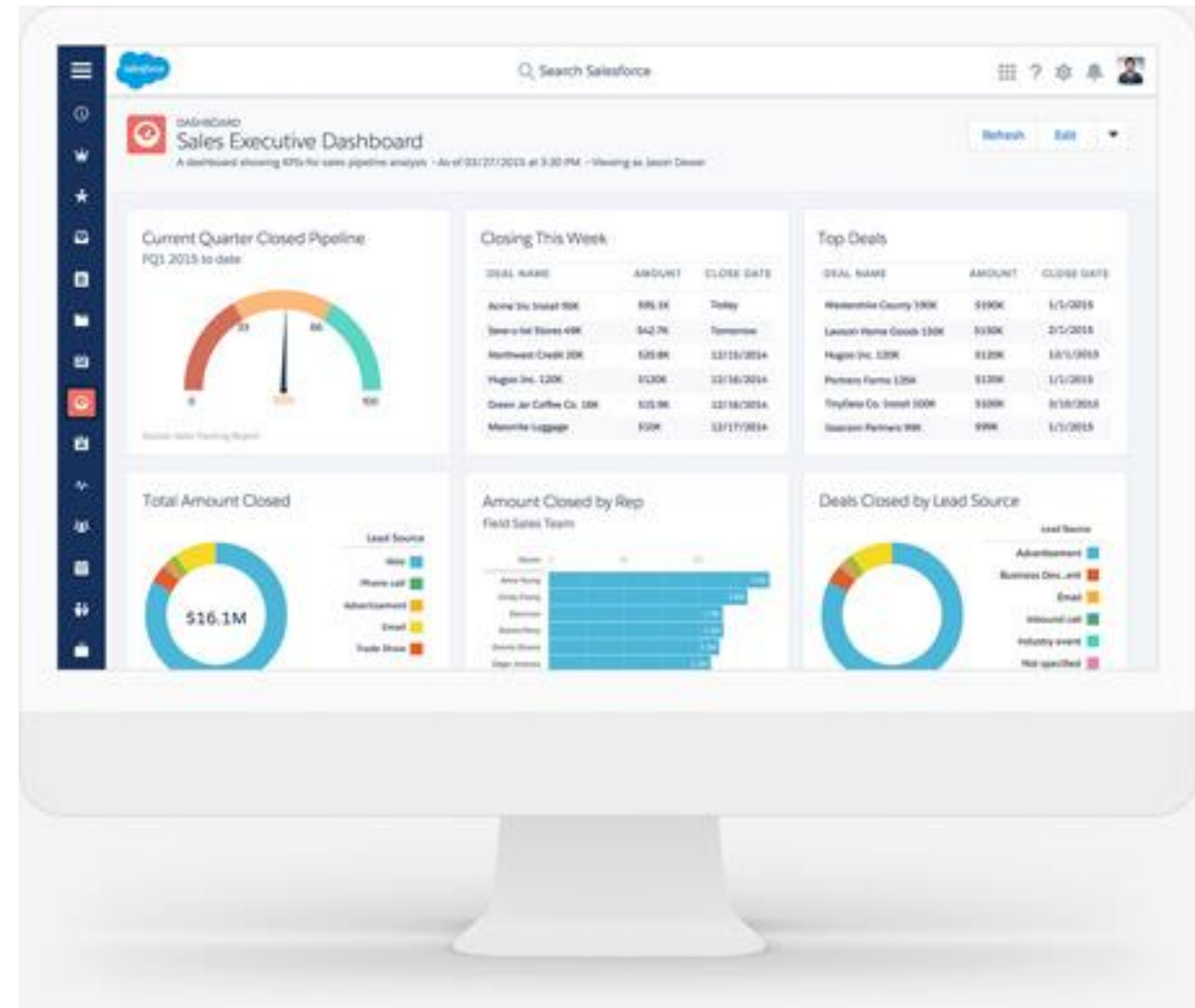


Source: <https://www.salesforce.com/hub/service/customer-service-examples/>



# CRM Dashboards

- What do they do?
- Who in the organization might want or need a CRM dashboard?
- Why are they important?



Source: <https://www.salesforce.com/eu/learning-centre/crm/what-is-crm/>

# CRM Accountability

- What does this mean?
- Where is the data?
- Why is this important?



Source: <https://www.workwisellc.com/crm-software/what-is-crm/>



# CRM Benefits

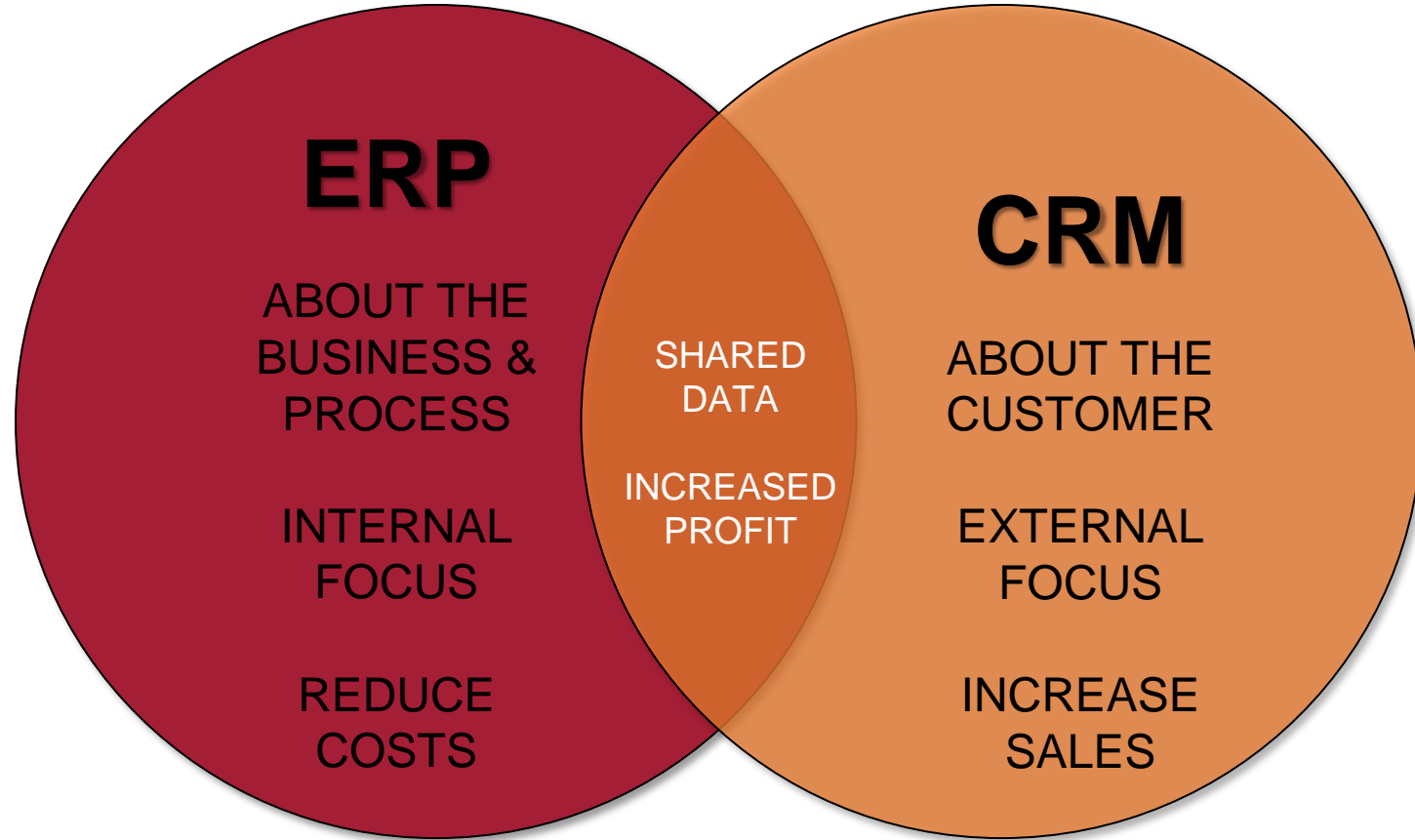
- Maximize Profits
- Understand Your Customer (data)
  - Analyze Buying Patterns
  - Problem Solving
- Accountability
- Customer Communication/Satisfaction
- Improve efficiency & information sharing



Source: <https://strategiesgroup.com/blog/benefits-of-crm/>

# ERP & CRM

- What's the Difference?
- What do they have in common?
- Which is a better first investment for a business?
- Why?





# Digital Systems

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Procure to Pay (P2P)  
In-Class Activity #5

The logo for FOX MIS, consisting of the word 'FOX' in white bold sans-serif font above the word 'MIS' in white bold sans-serif font, both set against a yellow rectangular background.

**FOX**  
**MIS**

# ICA5 Procure to Pay (P2P)

- **What?**
  - Review a narrative of the current P2P process at FitterSnacker
  - Review a swim lane diagram of how the process is currently performed
  - Create a swim lane diagram after the implementation of ERP to understand how it dramatically simplifies the process
- **Why?**
  - ERP systems can simplify business processes, making them much more efficient and much more effective
  - If your organization is not operating at this level of efficiency and effectiveness but your competitors are, you are at a major competitive disadvantage
  - It's all about leveraging technology to gain competitive advantage!

# Step #1

- **Read the narrative provided with the in-class activity describing the current P2P process at FitterSnacker**

After completing this activity you will be able to:

- Better understand one of the core business processes, purchase to pay (P2P or PtoP)
- Practice creating swim lane diagrams
- Understand the impact of installing an ERP system



## Step 1: Read the following narrative (Individually)

Read the following narrative: P2P is the core business process that is used by organizations to acquire the products and services they need to fulfill their mission. In this scenario, you are the plant manager at FitterSnacker, a company that makes and sells snack bars. The plant manager is responsible for determining what they are going to make, when they are going to make it and acquiring the raw materials (oats, raisins, chocolate chips, etc.) that they need to make the snack bars. Once the plant manager determines what they need, they send a purchase requisition to the procurement department.

The procurement agent verifies that the plant manager is authorized to place the order. They then select the supplier and send a purchase order to the supplier.

The supplier receives the order and picks, packs and ships the order. After the order has been shipped they send an invoice to the customer.

The warehouse receives the order and posts a goods receipt to show this. The person in the warehouse notifies the plant manager that the items have been received.

The invoice is processed by the accounts payable team in accounting. They match up the invoice with the purchase order and the goods receipt. If we received what we ordered and are being charged what we were expecting to pay then we pay the invoice. If not, we must figure out where the problem is and resolve the problem.

**Read the following narrative:** P2P is the core business process that is used by organizations to acquire the products and services they need to fulfill their mission. In this scenario, you are the plant manager at FitterSnacker, a company that makes and sells snack bars. The plant manager is responsible for determining what they are going to make, when they are going to make it and acquiring the raw materials (oats, raisins, chocolate chips, etc.) that they need to make the snack bars. Once the plant manager determines what they need, they send a purchase requisition to the procurement department.

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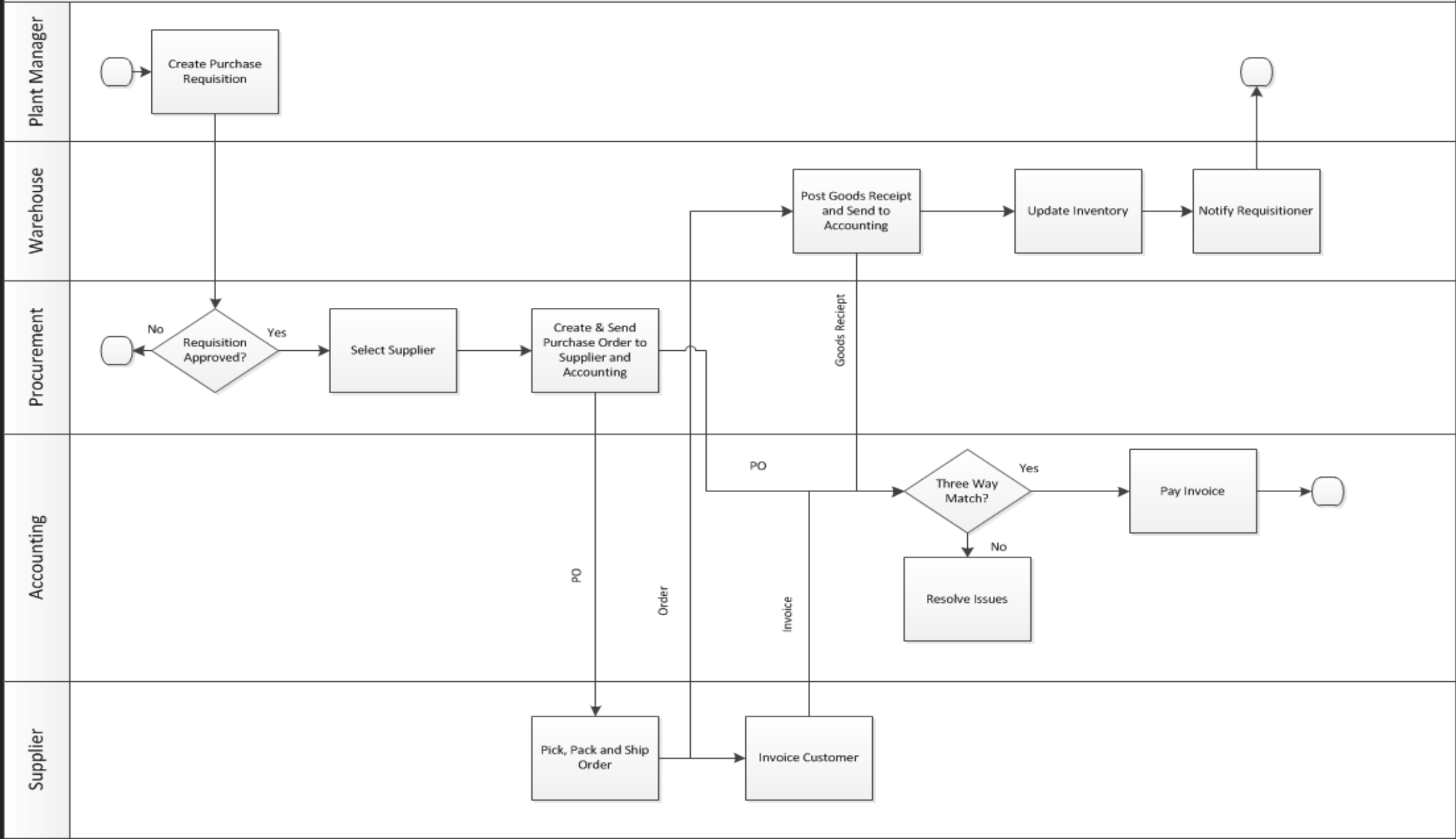
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# Step #2

- **Review the swim lane diagram that documents the current P2P process at FitterSnacker**

# Purchase to Pay



# Step #3

- **Read the second narrative which describes the changes after the ERP software is installed**

Question 1

0 pts

Step 4: As a Group (2-3 in a group) then as a class – Discuss the impact

- FitterSnacker has just implemented an ERP which will dramatically improve the efficiency of the organization.
- Based on historical sales and information entered into the system by the sales organization a forecast of what you plan to sell is automatically generated by the system.
- The system also manages inventory (both raw materials and finished goods). Since the system knows what you have (inventory) and the since the forecast tells you what you need (demand) the plant manager doesn't need to figure out what you are going to make and when you are going to make it (a.k.a. the production plan). The system will create the production plan. With the production plan the system can automatically create purchase requisitions at the appropriate times to acquire the required raw materials and execute the production plan.
- With the ERP we maintain a list of preferred suppliers for all raw materials. We also keep track of things like lead time (how long it takes to get a raw material) and pricing information for each supplier. Based on lead times and pricing, the system can automatically choose the optimal supplier and can send an electronic purchase order (PO) to the supplier. The electronic PO includes a unique PO number that we will use later on.
- The items are received at the warehouse. The PO number for the order is included with the shipping documents. The person at the warehouse pulls up the PO using the PO number and ensures that everything that was ordered was received and posts the goods receipt.
- The supplier sends FitterSnacker an electronic invoice. The invoice includes the PO number. The system can automatically perform the three-way match, matching up the original PO, the goods receipt and the invoice and if everything matches can send the payment electronically to the supplier.

HTML Editor

B I U A - A - Ix [List Icons] x² x₂ [List Icons]

[Table Icon] [Link Icon] [Image Icon] [Video Icon] [Globe Icon] [YouTube Icon] [Vimeo Icon] [Play Icon] [Text Color Icon] [Background Color Icon] 12pt Paragraph [Undo Icon]

# Step #4

- **Draw the swim lane after ERP has been implemented**
  - **How many actors do we have?**
  - **Which 2 actors disappeared?**
  - **Who/What is the new actor?**

# Step #5

- **Rate this activity using Canvas**

Question 2

0 pts

Rate this activity from 1 (completely disagree) to 5 (completely agree)...

- This is an engaging activity
- I learned a lot completing this activity
- This activity should be used again in future semesters

Question 3

0 pts

Is there anything you would like the professor to know?

HTML Editor

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12pt

Paragraph

ⓧ

0 words



# Digital Systems

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6.1 Information Systems Part II – Data Analytics and SCM

The logo for FOX MIS, consisting of the word 'FOX' in white, bold, sans-serif font above the word 'MIS' in white, bold, sans-serif font, both set against a solid yellow rectangular background.

**FOX**  
**MIS**



Who has created/contributed  
some data already today?

# Units of data...

- 1.7MB of data is created every second by every person during 2020.
- In the last two years alone, the astonishing 90% of the world's data has been created.
- 2.5 quintillion bytes of data are produced by humans every day.
- 463 exabytes of data will be generated each day by humans as of 2025.
- 95 million photos and videos are shared every day on Instagram.
- By the end of 2020, 44 zettabytes will make up the entire digital universe.
- Every day, 306.4 billion emails are sent, and 500 million Tweets are made.





SME 4X PRESENTS

# THE BIG DATA GOLD RUSH

DON'T BELIEVE US, HERE'S WHAT IS PREDICTED FOR 2020



**6.1 BN**

smartphone users globally <sup>(1)</sup>



**1.7 MB**

of new information will be created every second for every human being on the planet. <sup>(2)</sup>



**50 BN**

smart connected devices <sup>(3)</sup> in the world, all developed to collect, analyze and share data.



**3RD**

of all data <sup>(4)</sup> will pass through the cloud.



**\$65 MN**

additional net income <sup>(5)</sup> will be the result of just 10% increase in data accessibility for a typical Fortune 1000 company



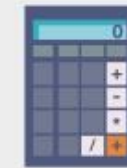
**60%**

of information delivered to decision makers will be considered by them always actionable, doubling the rate from the current (2015) level. <sup>(6)</sup>



**50%**

of all business analytics software will incorporate prescriptive analytics built on cognitive computing functionality. <sup>(6)</sup>



**90%**

of databases will be based on memory-optimized technology. <sup>(6)</sup>

THE INDUSTRIES DRIVING MUCH OF THIS GROWTH INCLUDE:

BANKING

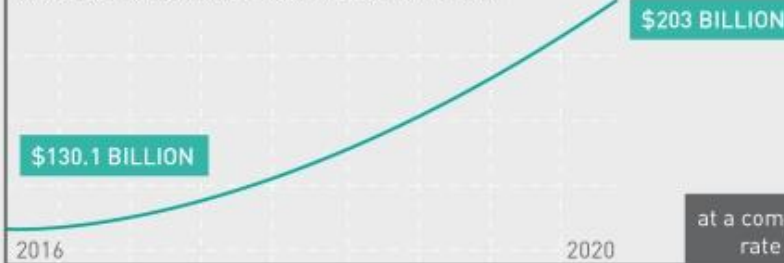
MANUFACTURING

GOVERNMENT

PROFESSIONAL SERVICES

These will remain the top five industries through 2020 <sup>(7)</sup>

IDC SAYS THAT WORLDWIDE REVENUES FOR BIG DATA AND BUSINESS ANALYTICS WILL GROW FROM



at a compound annual growth rate (CAGR) of 11.7%.







The world's internet population is growing significantly year over year. As of April 2020, the internet reaches 59% of the world's population and now represents 4.57 billion people — a 6% increase from January 2019.



GLOBAL INTERNET POPULATION GROWTH 2014–2020  
(IN BILLIONS)

As the world changes, businesses need to change with the times—and that requires data. Every click, swipe, share or like tells you something about your customers and what they want, and Domo is here to help your business make sense of all of it. Domo gives you the power to make data-driven decisions at any moment, on any device, so you can make smart choices in a rapidly changing world.

Learn more at [domo.com](https://domo.com)

SOURCES: STATISTA, VISUAL CAPITALIST, BUSINESS INSIDER, GAMESPOT, TECHCRUNCH, OMNICORE AGENCY, DOORDASH, BUSINESS OF APPS, NEW YORK TIMES, MUSIC BUSINESS WORLDWIDE, INC., THE VERGE, INC., HOOTSUITE, DUSTIN STOUT, REDDIT, UBER, AMAZON, VOX



# How does **data** influence ...

- Purchasing Habits
- Hiring
- Where you eat
- Politics
- Your decision making

# How does **data** influence ...

The importance of data in decision lies in consistency and continual growth. It enables companies to create new business opportunities, generate more revenue, predict future trends, optimize current operational efforts, and produce actionable insights.

Source: <https://medium.com/seamfix-engineering/data-analysis-and-its-importance-for-intelligent-data-driven-business-decisions-fccb9728278a>





# What is Data Analytics?

## Thoughts?

“The use of tools & people to uncover hidden patterns in the data that might not be readily available to the naked eye”

– Professor Lavin



Source: <https://i2.wp.com/johnbauerconsulting.com/wp-content/uploads/2017/06/Big-Data-Analysis-In-HR-Department.jpg>

# What is Data Analytics?

## Three Types of Analytics:

- Descriptive – Dashboards (BI)
- Predictive – use past data to model future
- Prescriptive – Optimization; advise on how best to do your job.



Source: <https://i2.wp.com/johnbauerconsulting.com/wp-content/uploads/2017/06/Big-Data-Analysis-In-HR-Department.jpg>

**“Analytics is the process of making sense of large data sets and unlocking patterns, often using data visualization, to enable better decision making.”**

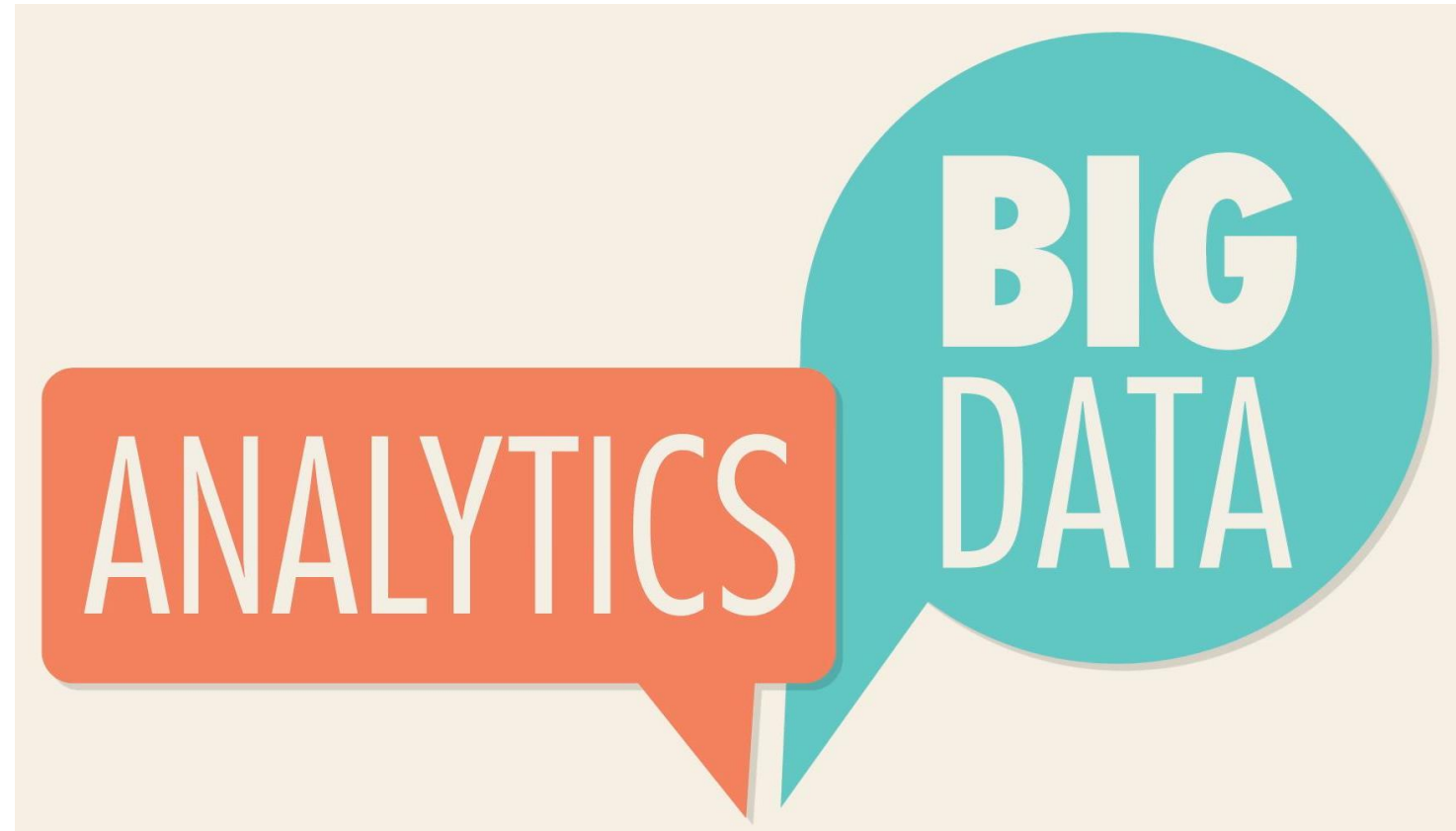
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- Professor Amy Lavin

# Data Investments...Why Care?

## Top Reasons Why:

- Decrease Expenses
- Find New Innovations
- Launch New Products/Services
- Increase Efficiency
- Transform Business
- Establish Data-Driven Culture



<https://hbr.org/2017/04/how-companies-say-theyre-using-big-data>

Source: <https://hbr.org/video/3633937151001/the-explainer-big-data-and-analytics>

# Big Data & Mickey D's

## **\$300 Million Acquisition**

- Infrastructure Improvements
- Technology Transformation
- Digital Innovation
- Efficiency & Effectiveness
- Customer Experience

## **Predictive Analytics?**



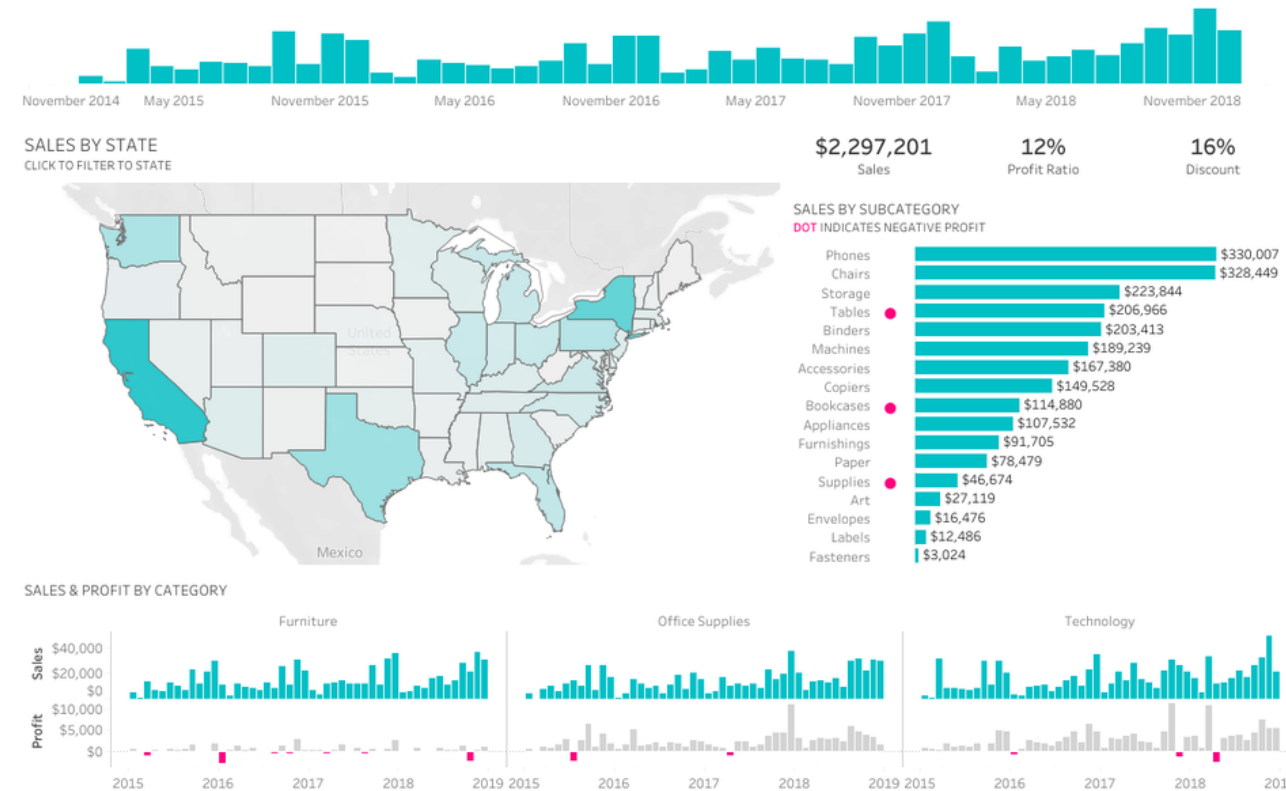
Source: KIYOSHI OTA/BLOOMBERG/GETTY IMAGES

# What can data do for you?

## Data Analysis & Data Visualization

- What's the difference?
  - Data Analysis: an exploratory process
  - Data Visualization: visual representation
- What's the role of the dashboard?
  - Who are your stakeholders?
  - Which industries utilize dashboards?
  - When do you need them?

### SALES & PROFITABILITY



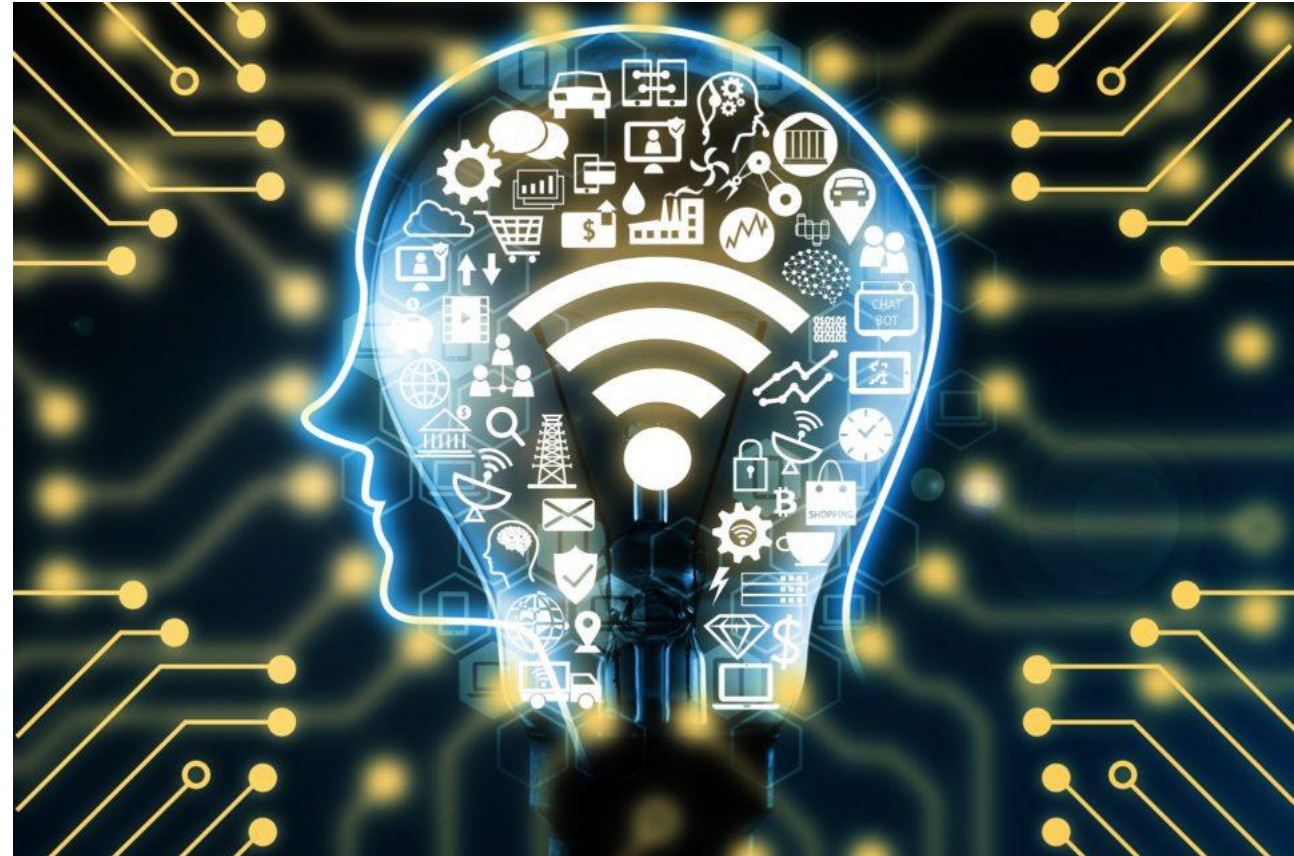
Source: <https://thumbor.forbes.com/thumbor/960x0/https%3A%2F%2Fblogs-images.forbes.com%2Fevamurray%2Ffiles%2F2019%2F03%2FExecutive-Sales-Profitability.jpg>



# What is Business Intelligence (BI)?

## BI Leverages Software & Services to Transform Data

- Mobile BI
- User friendly
- Agile & Intuitive Systems
- Leads to Strategic Business Decisions

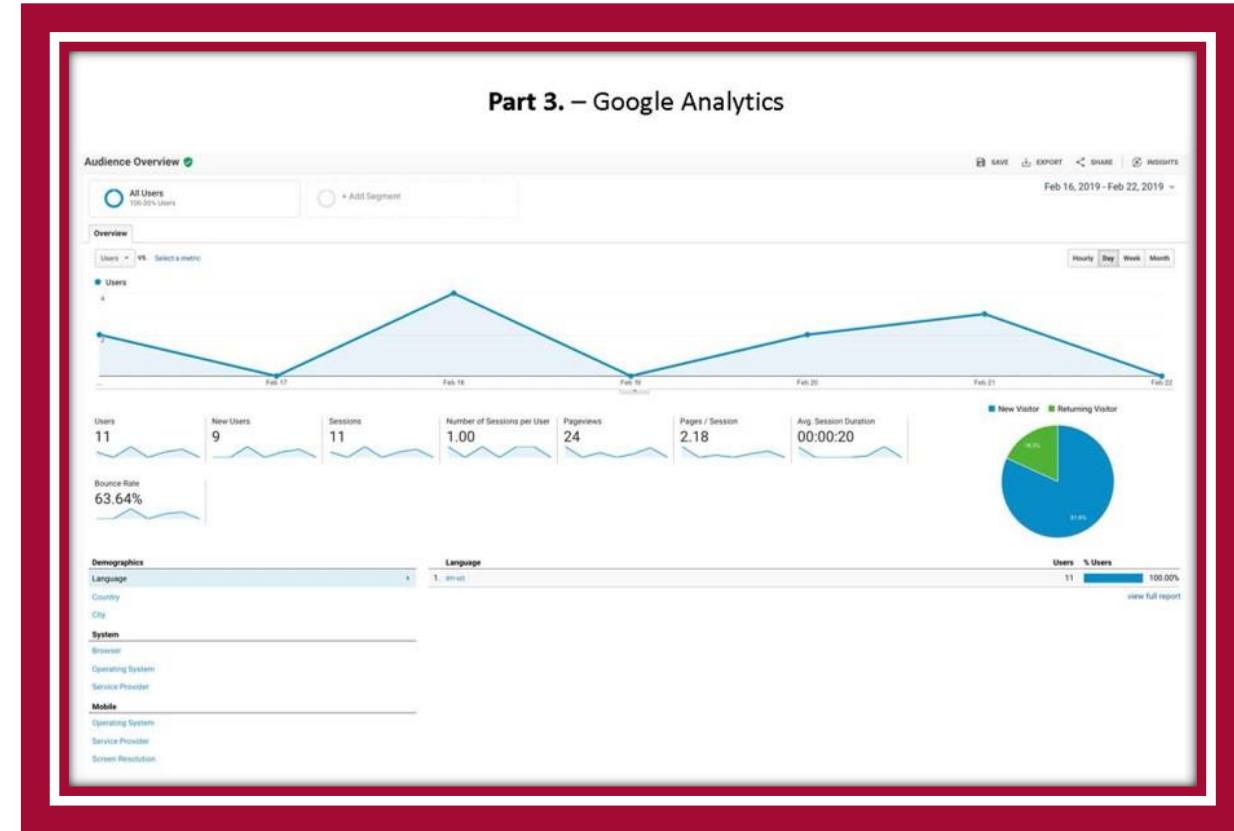


Source: <https://blog.radware.com/tag/internet-of-things/page/3/>

# Google Analytics

## What Can We Track?

- web site metadata & user engagement
- Number of Sessions
- Average Session Duration (minutes, hours, etc.)
- Number of pages visited
  - Duration of Each Visit
- Bounce Rate
- **Conversion Rate**



# Learn IT #2

## Get Certified!

- Google Analytics for Beginners
  - Complete all four units
  - Score 80% or better on all assessments



# What is Supply Chain Management (SCM)?

“Supply Chain includes many components...from Procurement to Manufacturing to Distribution. It’s about getting the right product on the right shelf at the right time!” – Professor Doyle

## Cross Functional Approach:

- Improves trust & collaboration
- Improves inventory visibility & velocity

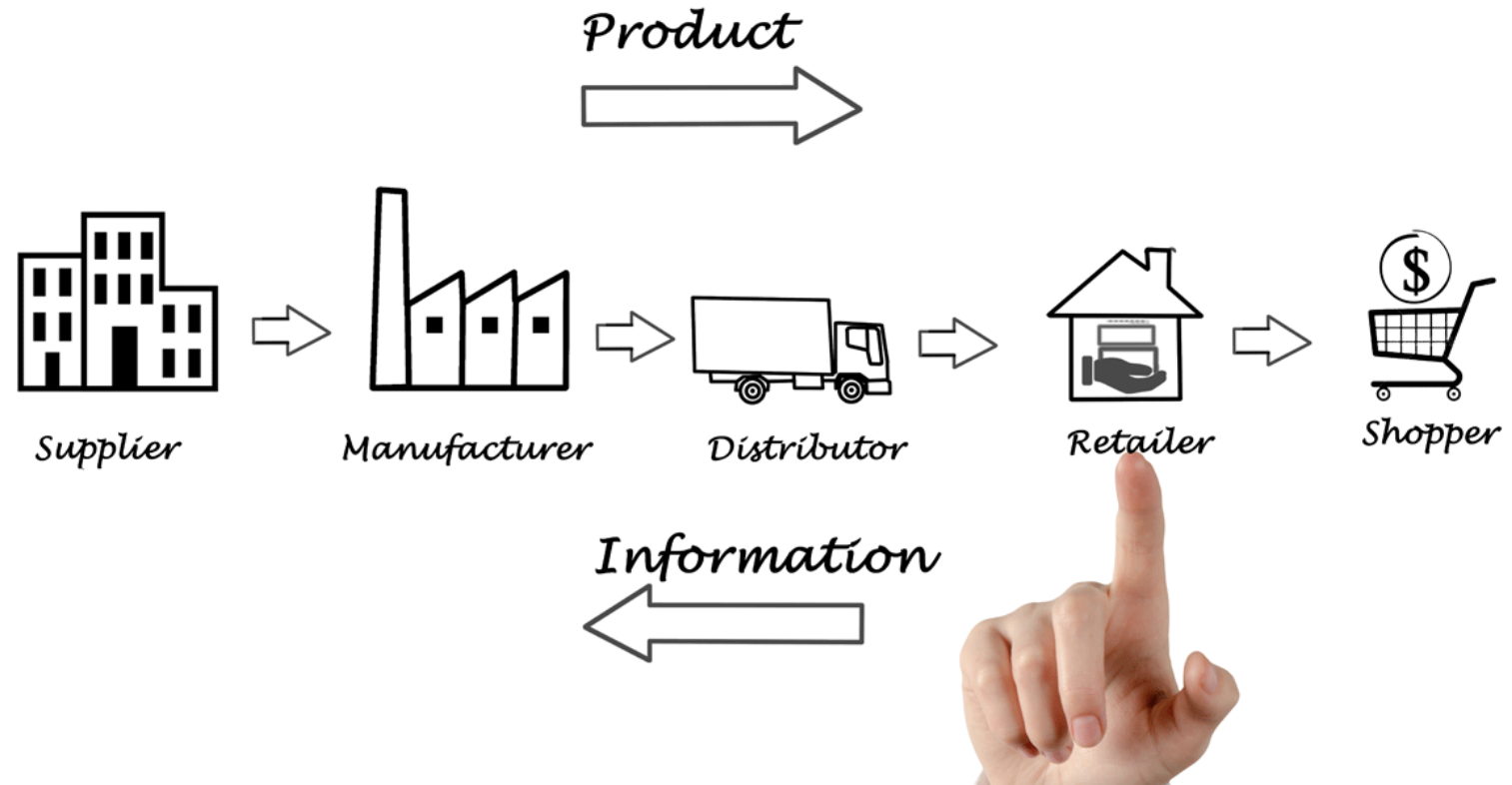


Source: <https://www.chainstoreage.com/wp-content/uploads/2017/06/supplychain.jpg>

# Supply Chain Management...

## Pick a product

- Who are the key actors?
- What types of materials are involved?
- What about technology?
- What skills are required?
- What's missing?

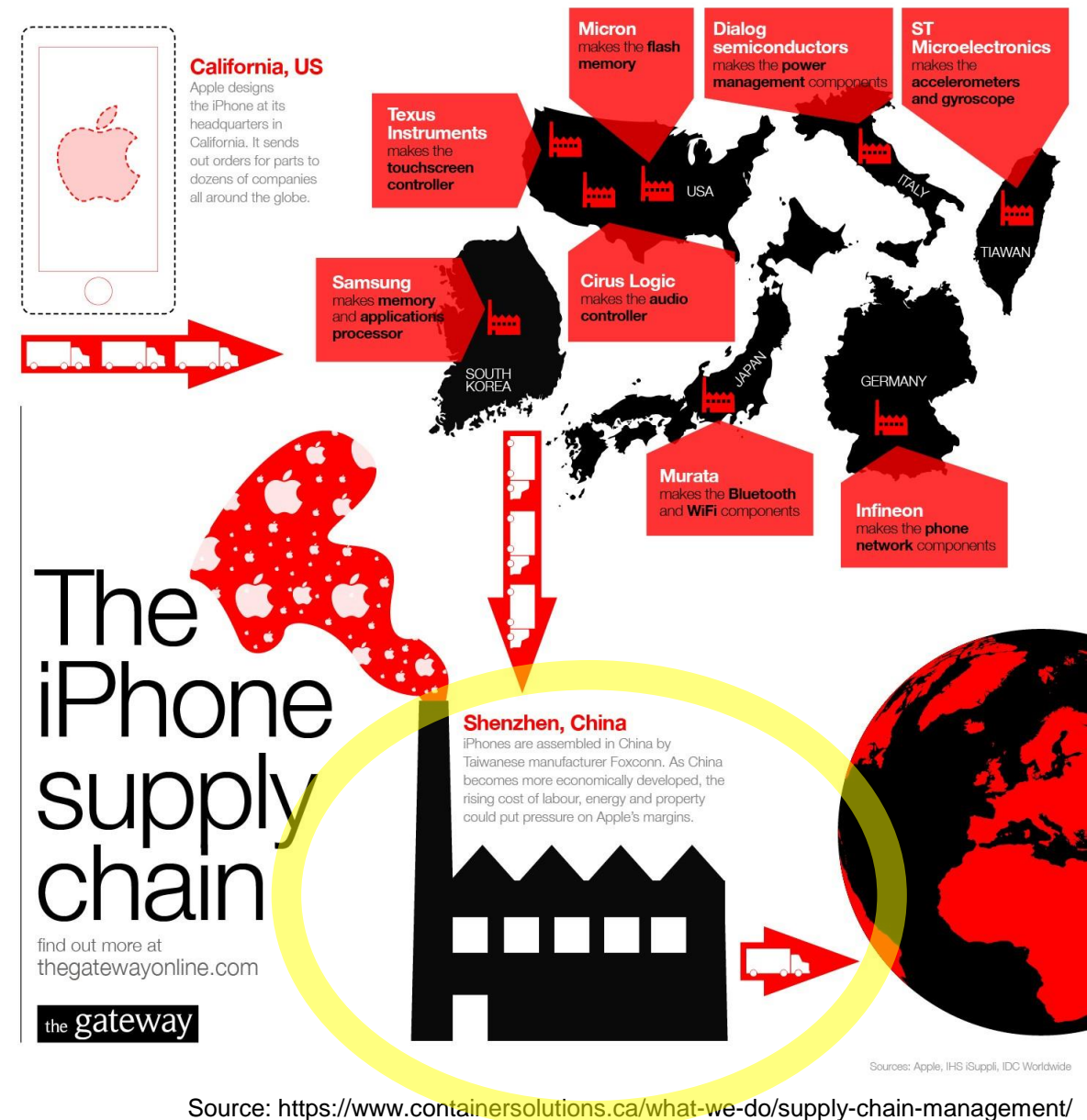


Source: <https://www.containersolutions.ca/what-we-do/supply-chain-management/>



# Case Study: iPhone Xs

- Where is your iPhone Made?
- What happens in Shenzhen, China if there are any delays?
- How do you plan for problems?
  - Weather
  - Material shortages
  - Strikes



Source: <https://www.containersolutions.ca/what-we-do/supply-chain-management/>

# SCM Discussion

- Who works for a company which manufactures a product?
- What kind of product is it?
- What stuff do you need to make your product?
- Where do you get this stuff?
- What happens if they run out of this stuff?

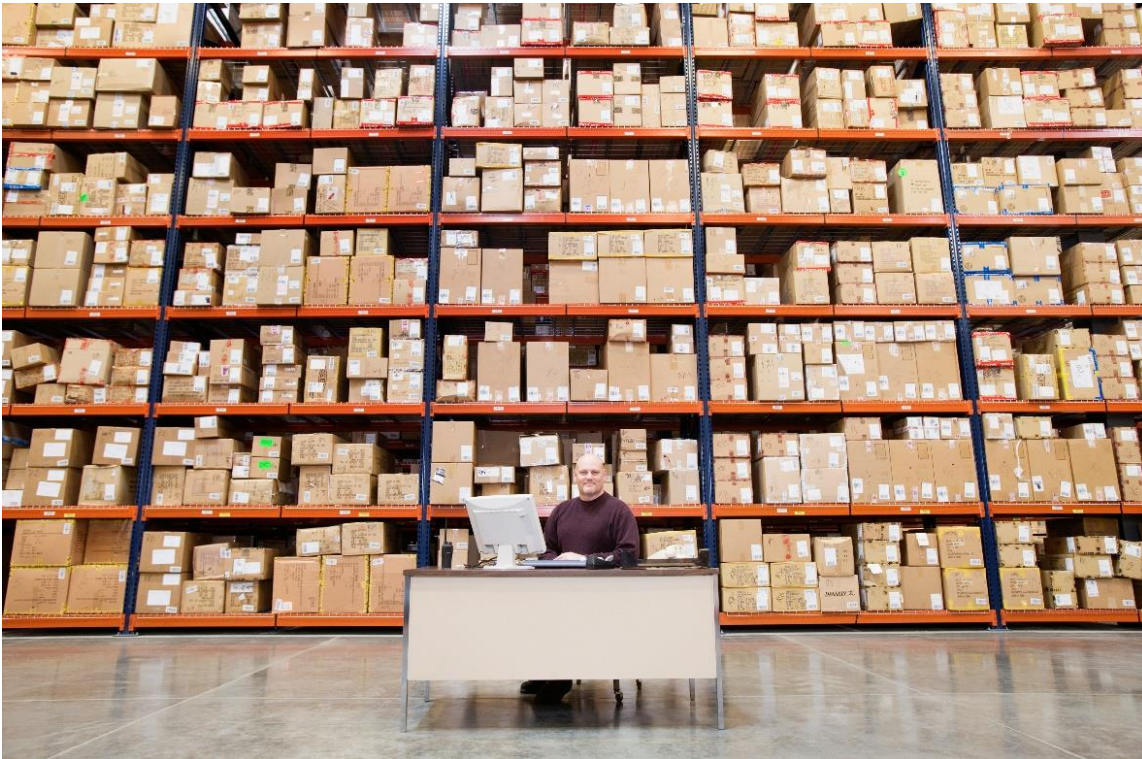


Source: <https://www.neurored.com/wp-content/uploads/2018/01/supply-chain-smartification-1030x824.png>



# Safety Stock – That's the Answer!!!

- What people in fulfillment see...

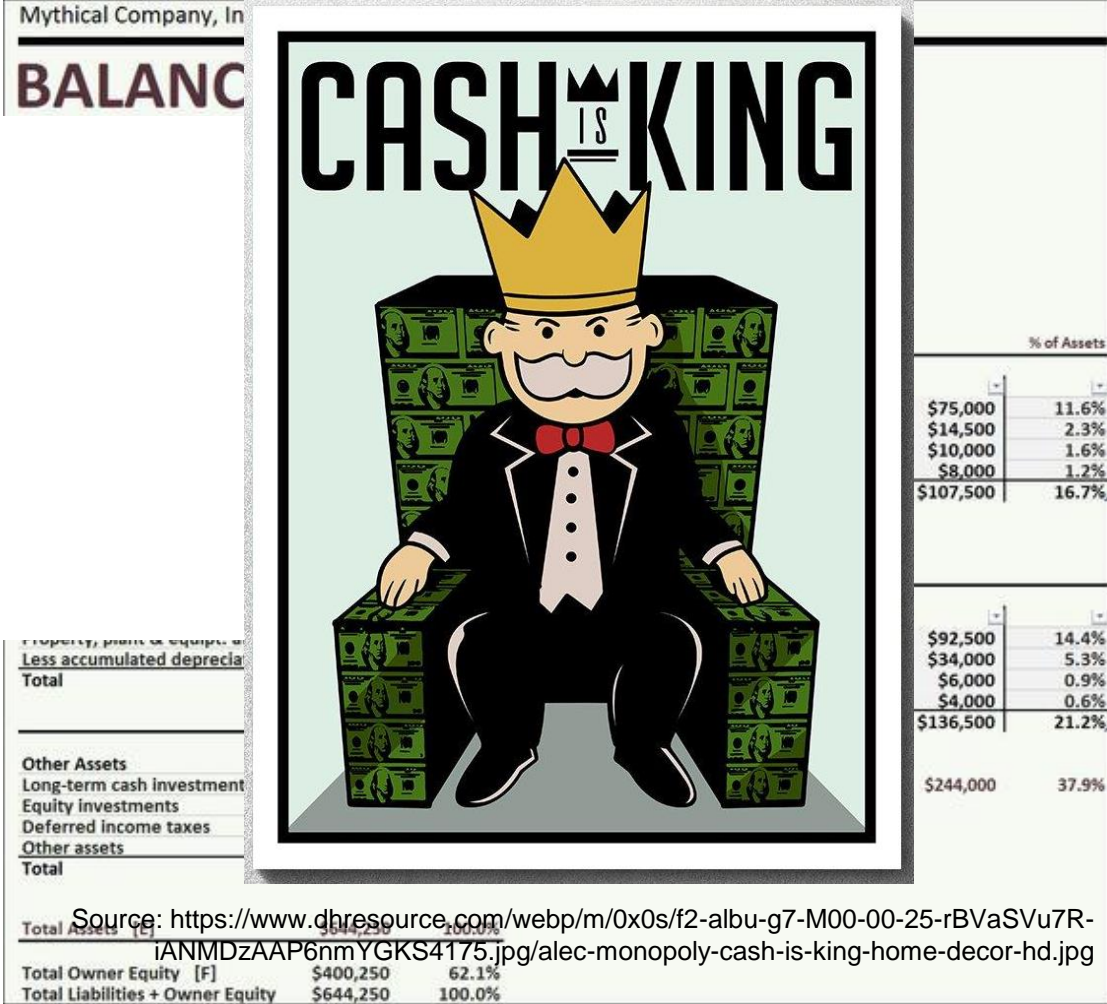


- What people in Accounting see...



What else could you do with this cash?

What do our accounting friends tell us?



# Supply Chain Optimization

## SCM Modules Support two functions:

## 1. Supply Chain Planning

- Work Backwards

## 2. Supply Chain Execution

- Efficient flow of products, information, & financing



Source: <https://liquidplanner-wpengine.netdna-ssl.com/wp-content/uploads/2019/04/Supply-Chain-graphic.jpg>



# What is RFID

## What is RFID?

- Radio Frequency Identification
- Wireless technology that lets you identify objects that have been fitted with special RF identification tags

## What is RFID good for?

- Inventory control, access control...

## How it works

- Antenna reads electromagnetic energy
- Can penetrate non-metallic solid objects

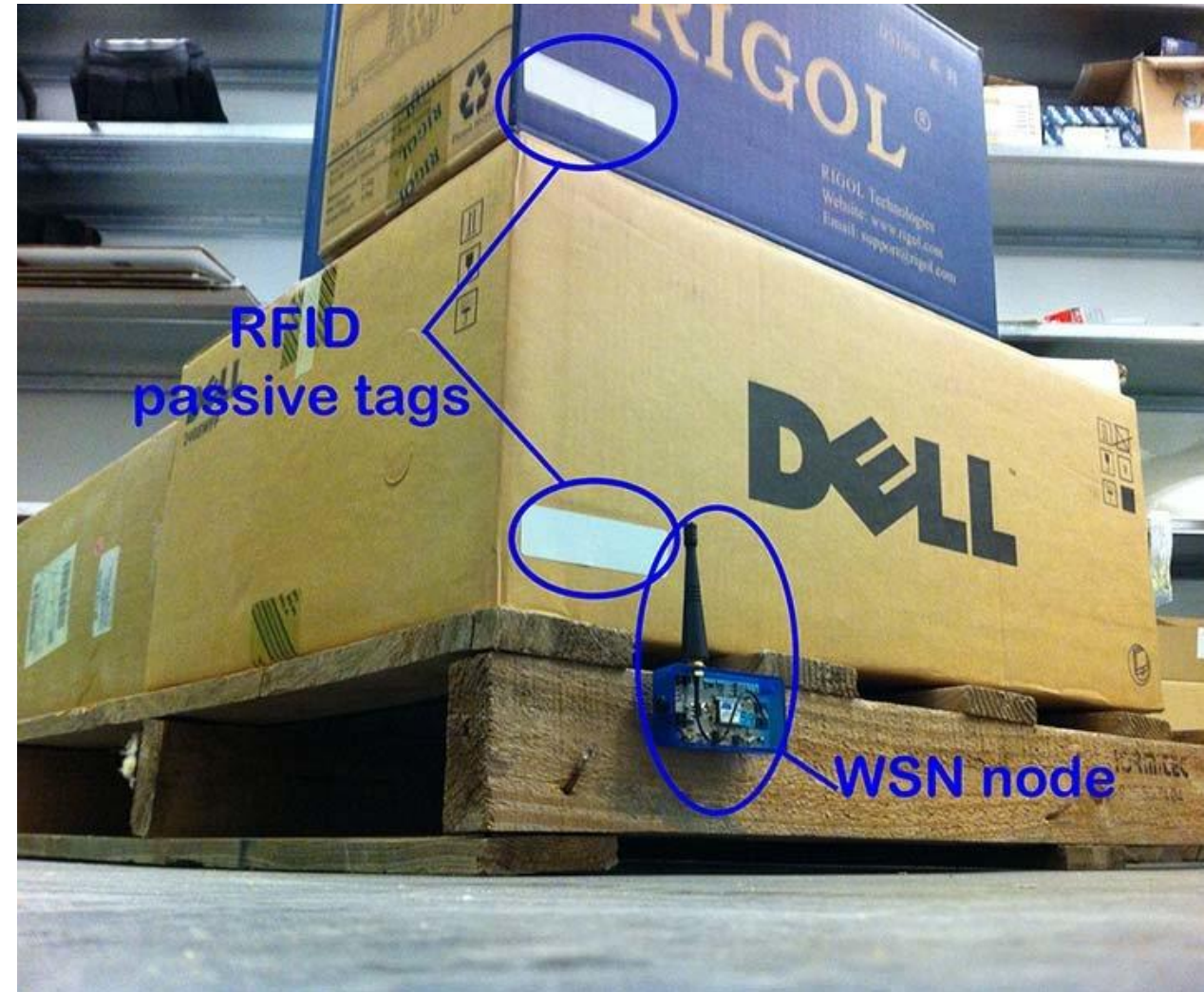


Source: <https://journals.ala.org/index.php/ltr/article/viewFile/4514/5301/6514>

# RFID explained

The use of electromagnetic energy to transit energy between a reader (transceiver) and the tag (antenna).

- ✓ RFID tags can contain more information than bar codes.
- ✓ Tags are programmable
  - Scanning can be done from greater distance.
  - Passive tags—inexpensive, range of few feet.
  - Active tags—more expensive, longer range



Source: [https://www.researchgate.net/profile/Jose\\_San\\_Jose\\_Vieco/publication/261430560/figure/fig1/AS:564991784742913@1511715946690/WSN-Node-and-RFID-tags-in-a-pallet.png](https://www.researchgate.net/profile/Jose_San_Jose_Vieco/publication/261430560/figure/fig1/AS:564991784742913@1511715946690/WSN-Node-and-RFID-tags-in-a-pallet.png)



# Case Study: Disney Magic Band

## Why Did Disney Invest \$1 Billion?

- Marketing Opportunities
- UX & CX
- Patron Tracking
  - Multiple Parks
  - Hotels
- Endless Possibilities!



Source: [https://media.wired.com/photos/593275a15c4fbd732b552d4a/master/w\\_1200,c\\_limit/disneymagicband2\\_f.jpg](https://media.wired.com/photos/593275a15c4fbd732b552d4a/master/w_1200,c_limit/disneymagicband2_f.jpg)

# More to Come

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Prepare with Readings & Videos before our next class!!!

Exam 2 next week-end!