

# ISA 401: Business Intelligence & Data Visualization

## 21: Business Reporting

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 Automated Scheduler for Office Hours

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# Learning Objectives for Today's Class

- Define a “business report” & its main functions
- Understand the importance of the right KPIs
- Automate traditional business reports
- Dashboards as real-time business reporting tools

# What is a Business Report and its Main Functions

# Definition and Concepts

## What is a report?

- A **report** is any communication artifact prepared to convey specific **information**
- A **report** = information → data-driven decisions
- A **report** can fulfill many functions:
  - To ensure proper departmental functioning
  - To provide information
  - To provide the results of an analysis
  - To persuade others to act
  - To create an organizational memory

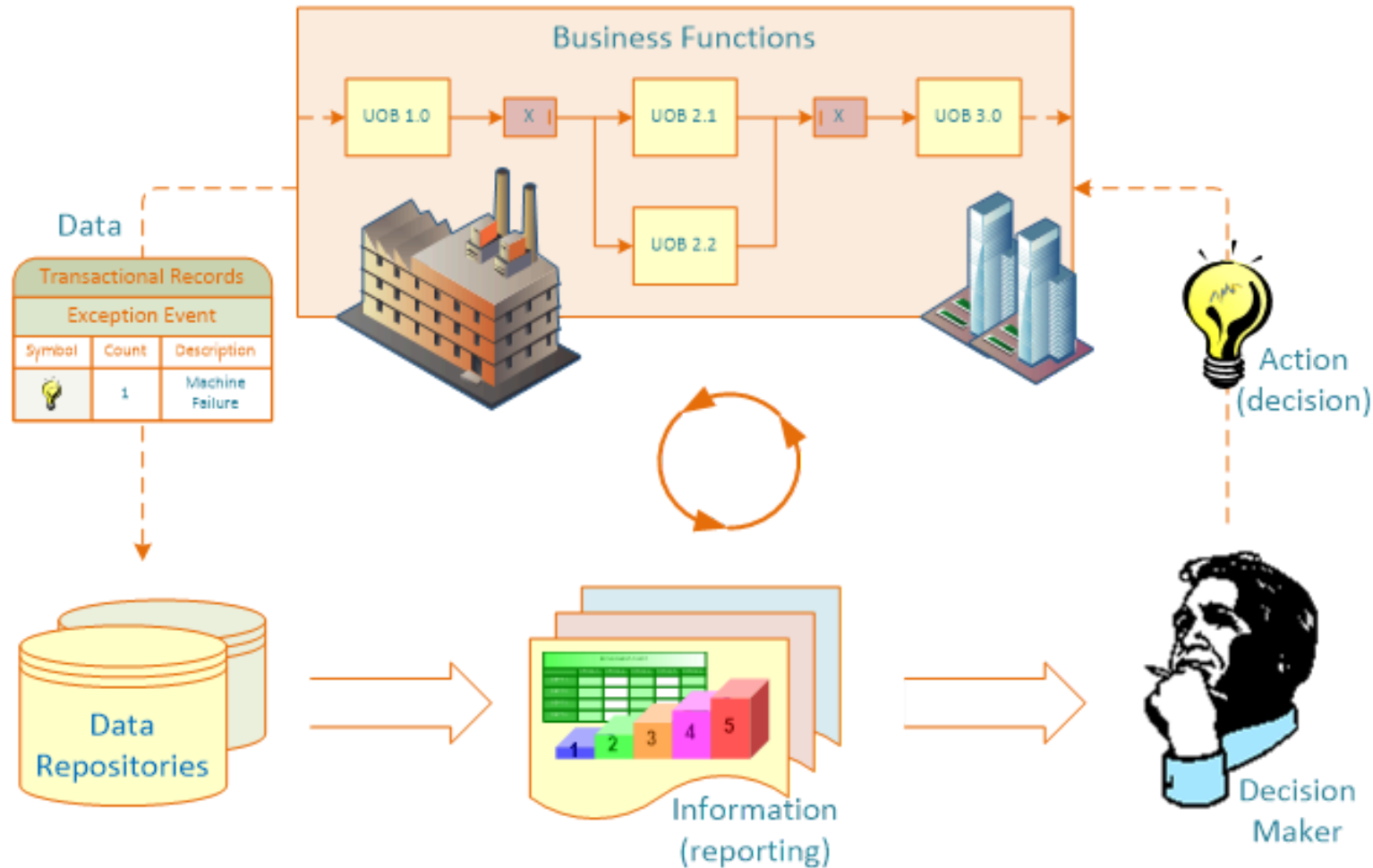
# What is a Business Report?

- A written document that contains information regarding business matters.
- **Purpose:** to improve managerial decisions.
- **Source:** data from inside and outside the organization (via the use of ETL)
- **Format:** text + tables + graphs/charts
- **Distribution:** in-print, email, portal/intranet

The process of business reporting:

**Data acquisition → Information generation → Decision making → Process management**

# The Business Reporting Process



# Keys to Successful Reports

- Clarity
- Brevity
- Completeness
- Correctness
- Report types (in terms of content and format)
  - Informal a single letter or a memo
  - Formal 10-100 pages; cover + summary + text
  - Short report periodic, informative, investigative

# Dashboards vs Scorecards

## Dashboards

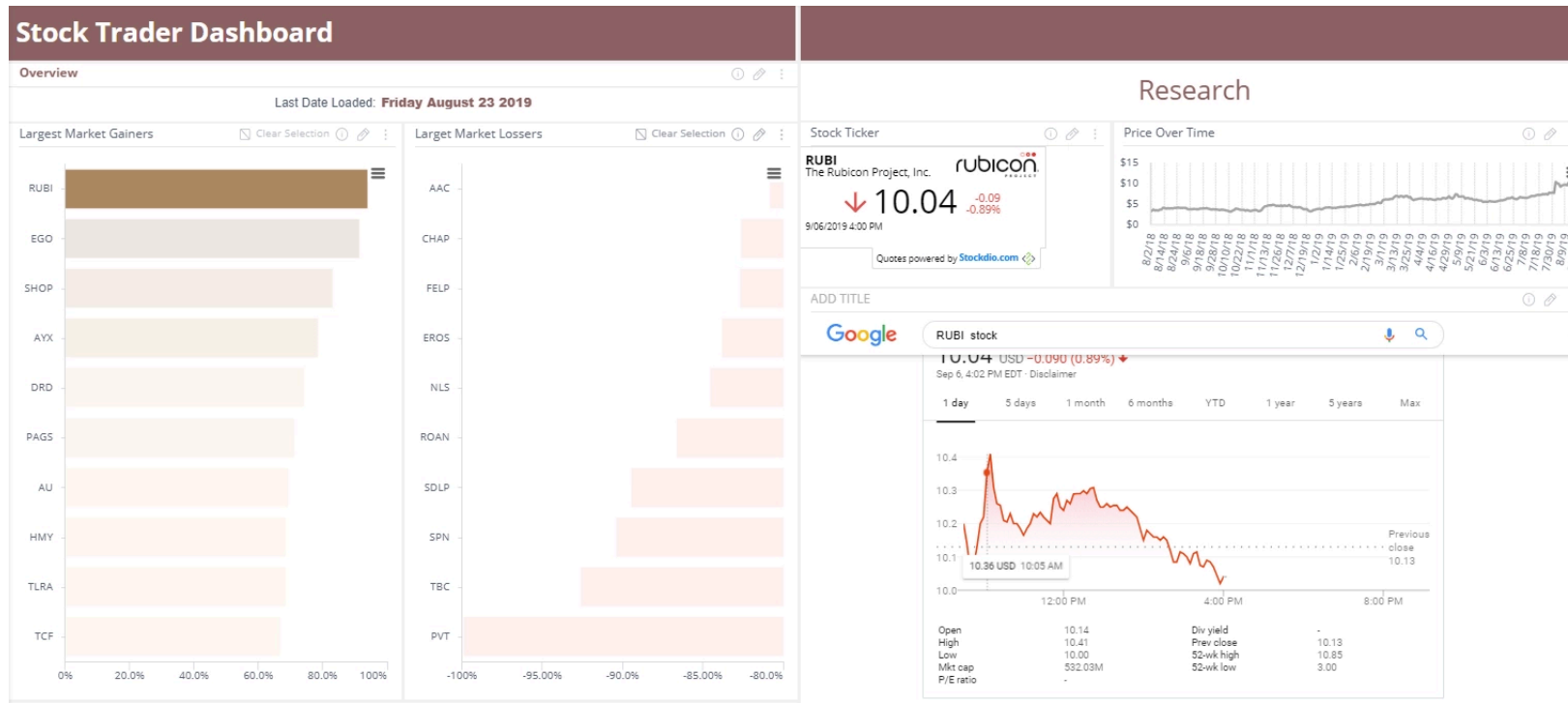
- Dashboards provide **monitoring tools for operational performance (often in real-time)**.
- Dashboards monitor performance by **tracking metrics (typically over-time and often without comparing them to target values)**.

## Scorecards

- Scorecards provide a **snapshot of current performance (as measured using KPIs) vs. their targets**.
- Current performance is **an aggregated measure** (e.g., day/month), i.e., ~ static
- **Goal:** make better strategic decisions based on the *distance = target – performance*



# Dashboard Examples

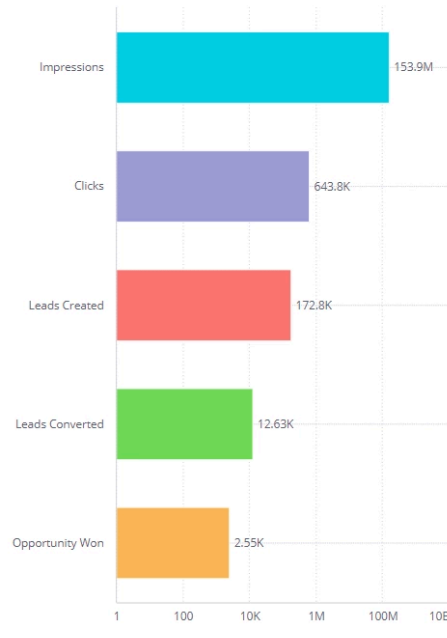


A stock trader dashboard example

Source: <https://www.sisense.com/dashboard-examples/finance/>

# Dashboard Examples

Funnel



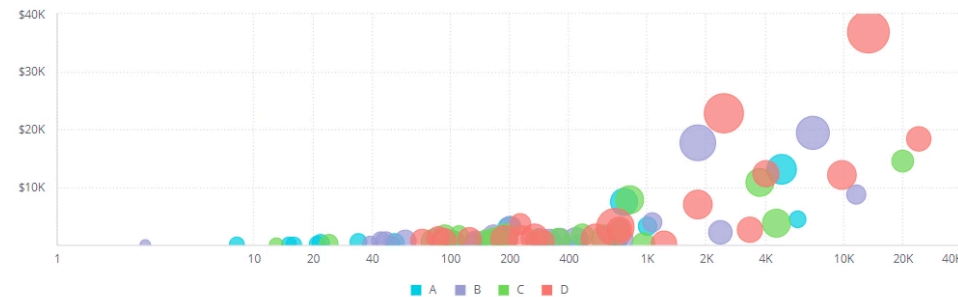
Pay-per-click Campaign Optimization

GA Conversion Rate  
**3.82%**  
Growth of Conversion Rate: 0.0%

Leads To Opps Conversion  
**1.90%**  
Growth From Past Month: 0.0%

Cost Per Click  
**\$74.45**  
Change From Last Month: 0.0%

Cost to Interaction Optimization - By Lead Scoring (Highest: A | Lowest: D)



Leads Converted Vs. Cost Trend



A dashboard of search engine optimization and pay-per-click performance  
Source: <https://www.sisense.com/dashboard-examples/marketing/>

# Out-of-Class: Make this Power BI Scoreboard



Power BI

Sign in to view this report

Sign in

# The Importance of the Right KPIs

15:00

# 0.15pt Bonus Activity: Paper Airplanes

Activity Description

Identify KPIs for this Activity

Over the next 15 minutes, please design the **best paper plane that can consistently hit the target on the whiteboard (from a distance of 6ft).**

## Games Rules:

- You are allowed to use any of the material that was brought to class.
- Work with your group to have the best design.
- You can look up designs online or design your own -- no design restrictions.
- When testing, make sure that there no people between your launching point and your target.
- A demo will proceed for the teams that want to “show-off” their talents.
- **Winning team gets 0.15 point (out of 25) added to their Exam II Grade.**

15:00

# 0.15pt Bonus Activity: Paper Airplanes

Activity Description

Identify KPIs for this Activity

## **Operational Performance Indicators** (List 5-7)

- Cycle time

## **Client/Product Performance Indicators** (List 5-7)

- Accuracy

# Automating Business Reports

# Automating Visual Business Reports

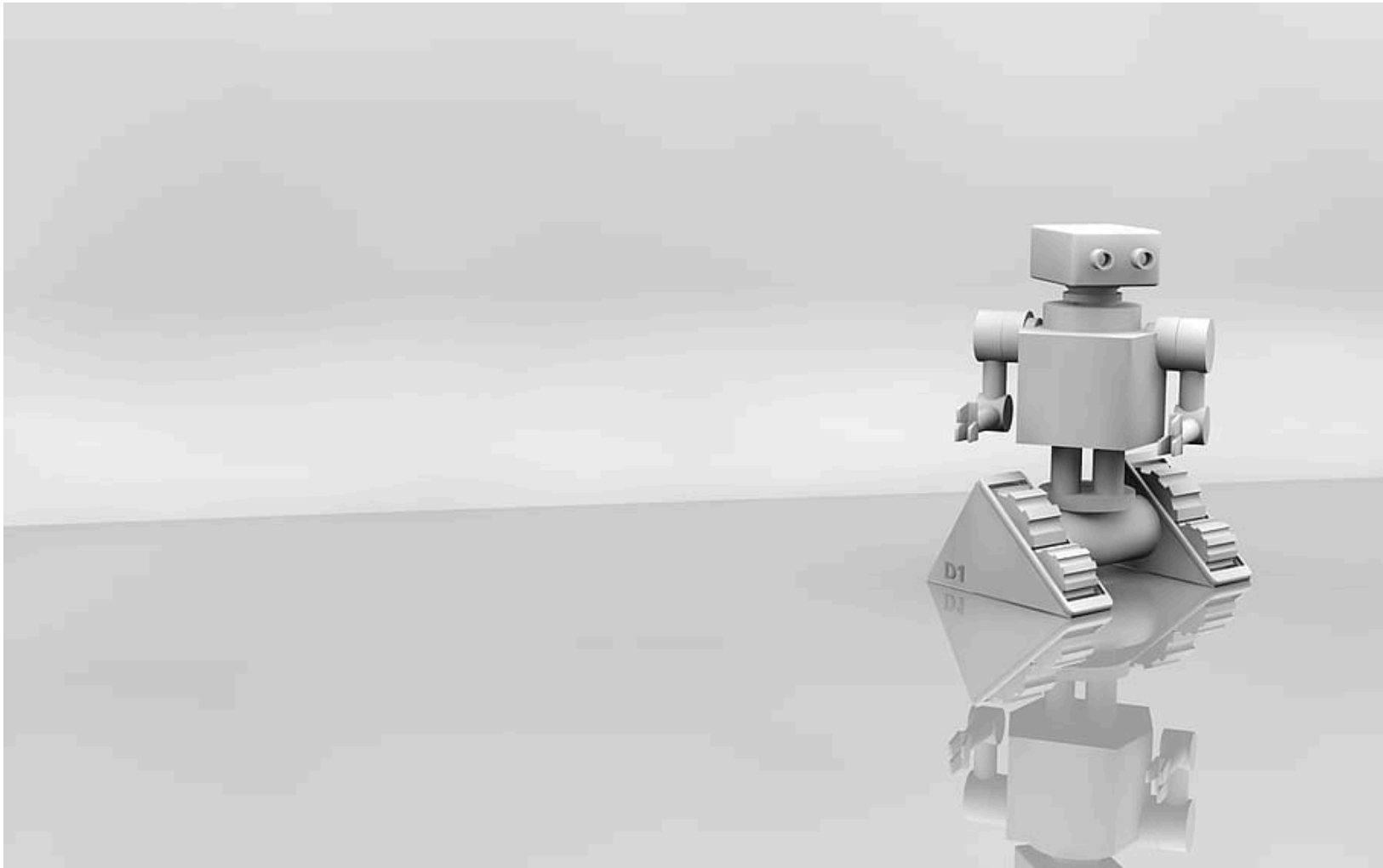
In many data visualization software, this can be accomplished easily by:

- Live connections to data files and databases; or
- Auto-refreshing or some similar concept.

Hence, we often think of **BI dashboards as tools for real-time performance monitoring**.



# Automating Traditional Business Reports: RPA



# Automating Traditional Business Reports:



Rethink Reporting with Automation - RStudio

# Recap

# Summary of Main Points

- Define a “business report” & its main functions
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