THE POWER OF INFORMATION DESIGN ON INFORMATION INTERPRETATION
ARE MAMMOGRAMS IMPORTANT?

average size of breast tumor
tumor at diagnosis in early 1980's
when only 13% of women were
going regular mammograms

average size of breast
at diagnosis in late 1990's
when 60% of women were
going regular
Who will win the presidency?

Chance of winning

Hillary Clinton 71.4%
Donald Trump 28.6%

FiveThirtyEight
INFORMATION DESIGN IS FUNDAMENTALLY ABOUT MANAGING THE BALANCE BETWEEN TWO OUTCOMES:

1. SUCCINCTLY COMMUNICATING IDEAS
2. BEING TRUE TO DATA’S INHERENT NUANCE

AS INFORMATION DESIGNERS, IT’S OUR JOB TO MANAGE THAT BALANCE IN A WAY THAT’S APPROPRIATE TO THE DATA, ITS AUDIENCE, OUR OWN WORLDVIEW, AND THE STORY BEING TOLD.

THIS TALK WILL EXPLORE STRATEGIES FOR MANAGING THAT BALANCE.
OUTLINE:

1. ABOUT ME

2. CLASSIFICATIONS OF INFORMATION DESIGNS

3. VISUAL STRUCTURES & IMPACT ON STORYTELLING

4. GUIDELINES FOR DRIVING VISUALIZATION-BASED DECISION-MAKING
ABOUT ME:

UX RESEARCH / DESIGN AT HONEYWELL USER EXPERIENCE (SINCE 2013)

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(a.k.a. - I am not a developer)
CLASSIFICATIONS OF INFORMATION DESIGNS
(or: “STEP 1: WHAT DO YOU WANT TO DO?”)
THE INFORMATION DESIGN OUTCOME SPECTRUM:
WHICH ONE DO YOU WANT TO DO?

I WANT TO ANALYZE A DATASET

I WANT TO COMMUNICATE AN IDEA
DEFINITION OF AN
ANALYTICAL
INFORMATION DESIGN:

Analytical information designs are built to afford deep analysis and understanding of a set of data.

Because findings / insights / story are not yet known, the visualization is not built with an intended message.

Identifying characteristics:
- High data : ink ratio
- “sandbox” interaction model
- suited to high-information / patient audiences
NYT - The Upshot. "How Unemployed Americans spend their weekdays."
50% of women in South Korea were in the labor force in 2008.
DEFINITION OF A
COMMUNICATIVE
INFORMATION DESIGN:

Communicative information designs are built to articulate a precise message to the audience.

Because the objective is to send a message, it’s only necessary to show the depth of data needed to support that message.

Identifying characteristics:
- Lower data : ink ratio
- “storybook” interaction model
- suited to low-info / impatient audiences
The U.S. is 1 of 9 countries worldwide that doesn't provide for paid maternity leave.

Wife beating is culturally accepted, even among women.

Millions of girls are missing. Why?
I want to **COMMUNICATE** an idea

I want to **ANALYZE** a dataset

THE INFORMATION DESIGN OUTCOME SPECTRUM:

WHICH ONE DO YOU WANT TO DO?
I want to communicate an idea.

I want to analyze a dataset.

WHY CAN’T WE DO BOTH?

THE INFORMATION DESIGN
OUTCOME SPECTRUM:
WHICH ONE DO YOU WANT TO DO?

I WANT TO
ANALYZE
A DATASET

I WANT TO
COMMUNICATE
AN IDEA
VISUAL STRUCTURES & IMPACT ON STORYTELLING
(OR: “STEP 2: BUILDING VISUAL STRUCTURES THAT TELL YOUR STORY”)
WHAT DO I MEAN BY A "VISUAL STRUCTURE"?

A VISUAL STRUCTURE IS THE LOGICAL SET OF RULES THAT GOVERNS HOW FIELDS OF DATA ARE REPRESENTED IN A VISUALIZATION.

IT COVERS EVERY ELEMENT IN THE DESIGN THAT CAN BE VARIED TO CONVEY INFORMATION - GEOMETRY, COLOR, VALUE, PATTERN, POPOVERS, TYPE, ICON LANGUAGE, ETC.

BECAUSE THE VISUAL STRUCTURE DRIVES THE VISUAL HIERARCHY OF AN INFORMATION DESIGN, THE DESIGN OF A VISUAL STRUCTURE HAS A HUGE EFFECT ON HOW A DESIGN IS INTERPRETED, AND THEREFORE THE STORY THAT GETS TOLD.
Attenti a questo drago

Hanno attraversato il mondo aprendo rotte migratorie destinate a durare nel tempo. Ora sono i nuovi protagonisti degli scambi internazionali. E le loro "Chinatown" diventano sempre più grandi. Un trend che appare inarrestabile.

A CURA DI — Francesco Franchi & Alessandro Ghiberti

Cover — The Move - Chinatown

Attenti al mercato

CHINA EXPO

LEGGENDA

PRINCIPALI GIARDINI

FLUSSI DI IMMIGRATI

CHINA SHIP

PING LINE

1.400 MILIONI DI DOLLARI

AGRICOLTURA

MANIFATTURA
EXAMPLE: PORTFOLIO MAP

Project Brief:
DOCUMENT ALL OF THE SKUS CURRENTLY IN A MULTI-ECOSYSTEM PORTFOLIO.

Objective:
GIVE BUSINESS LEADERSHIP CLEAR, PRODUCT-LEVEL INSIGHT INTO REVENUE SOURCES & REDUNDANCY. INTENT IS TO INFORM PORTFOLIO RATIONALIZATION / PLATFORMING STRATEGY.

Parameters to capture for each SKU:
CLASSIFICATION, PRICE, REVENUE, AND ECOSYSTEM COMPATIBILITY.

Number of SKUs:
6,000
1ST ITERATION
1st iteration: “Here's all the stuff we make.”

A. CLASSIFICATION:
   1. COLUMN (FAMILY),
   2. Y POSITION (MODEL)

B. PRICE:
   DISCRETE BARS (1/ PRICE POINT)

C. REVENUE:
   BAR HEIGHT (REVENUE BY PRICE POINT)

D. ECOSYSTEM RELATIONS:
   ???

PROBLEMS:
- DIFFICULT TO MAKE COMPARISONS
- NOT EASILY SCALABLE
- DOESN’T WEIGHT MORE VS. LESS IMPORTANT MODELS
2ND ITERATION
2nd iteration: “These product lines drive the most revenue.”

A. CLASSIFICATION:
1. COLUMN (FAMILY),
2. Y POSITION + X OFFSET (MODEL)*

B. PRICE: 
???

C. REVENUE: 
Y POSITION (FAMILY TOTAL) + BAR HEIGHT (MODEL ONLY)

D. ECOSYSTEM RELATIONS: 
???

PROBLEMS:
- STILL DIFFICULT TO MAKE COMPARISONS
- NOT EASILY SCALABLE
- DOESN’T CONSIDER PRICE

* offset disrupts the bar visually to make it easier to discern between different layers of classification
3RD ITERATION
3rd iteration: “This is a cool looking infographic.”

A. CLASSIFICATION:
1. COLUMN (FAMILY),
2. Y POSITION (MODEL)*

B. PRICE:
X POSITION

C. REVENUE:
Y POSITION (FAMILY TOTAL) + BAR HEIGHT (MODEL ONLY)

D. ECOSYSTEM RELATIONS:
???

PROBLEMS:
- STILL DIFFICULT TO MAKE COMPARISONS
- NOT EASILY SCALABLE
- NOT SPATIALLY ECONOMICAL
4TH ITERATION
4th iteration: “Only a few products drive most of our sales.”

A. CLASSIFICATION: 1. X POSITION, 2. GROUPING (MODEL)

B. PRICE: Y POSITION

C. REVENUE: BUBBLE SIZE

D. ECOSYSTEM RELATIONS: ???

PROS:
- SPATIAL ECONOMY
- ILLUSTRATES PRICE
- ADD’L DATA CAN BE CAPTURED BELOW (I.E. FEATURE SET)

PROBLEMS:
- STILL DIFFICULT TO MAKE COMPARISONS
- DOESN’T ILLUSTRATE HOW PRODUCTS RELATE TO EACH OTHER IN ECOSYSTEM
5TH ITERATION
5th iteration: “We make lots of SKUs for a few ecosystems.”

A. CLASSIFICATION: 1. LEFT/RIGHT (LINE OF BUSINESS)  
2. COLUMN (CATEGORY), 3. Y POSITION (FAMILY), 4. X POSITION (MODEL)

B. PRICE: ???

C. REVENUE: BUBBLE SIZE

D. ECOSYSTEM COMPATIBILITY: CONNECTING LINES

E. MANUFACTURED VS. OEM: BUBBLE COLOR

PROS:
- SPATIAL ECONOMY
- ADDITIONAL LEVEL OF CLASSIFICATION
- CAPTURES ECOSYSTEM RELATIONSHIPS
- CAPTURES OEM VS. MANUFACTURED PRODUCTS

PROBLEMS:
- DOESN’T CAPTURE PRICE
- LIMITED TO ONLY TWO LINES OF BUSINESS
Final: “We make a lot of product across a lot of ecosystems.”

A. CLASSIFICATION:
1. COLUMN & FILL COLOR (LINE OF BUSINESS),
2. ROW (PRODUCT CATEGORY),
3. X POSITION (PRODUCT LINE, PRODUCT FAMILY)
4. Y POSITION (MODEL)

B. PRICE:
TEXT

C. REVENUE:
BUBBLE SIZE

D. ECOSYSTEM RELATIONS:
BACKGROUND GRADIENTS

E. OEM VS. MANUFACTURED:
FILL PATTERN (SOLID / HATCH)
GUIDELINES FOR DRIVING
VISUALIZATION-BASED DECISION MAKING
1. DON’T LET VISUAL SYSTEMS BE DESIGNED ENTIRELY BY CODE.

START WITH THE STORY.
2. USER TEST YOUR VISUALIZATIONS JUST LIKE YOU WOULD TEST ANY OTHER SOFTWARE APPLICATION.
3. BE HONEST WITH YOURSELF ABOUT WHAT YOUR GOALS ARE.

DO YOU WANT TO INFORM?
OR TO PERSUADE?
4. BE TRUE TO THE DATA.
5. SET EXPECTATIONS.

ANALYTICAL VISUALIZATIONS DON’T GIVE YOU ANSWERS, BUT HELP YOU ASK THE RIGHT QUESTIONS.
THANK YOU!!

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