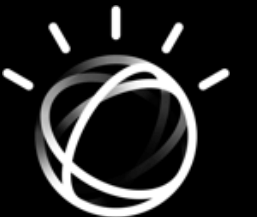# AI meets Fashion

Data, algorithms and analytics for the fashion industry

Sanjay Sinha, IBM Watson AI & Data

As data generation explodes, a huge opportunity awaits
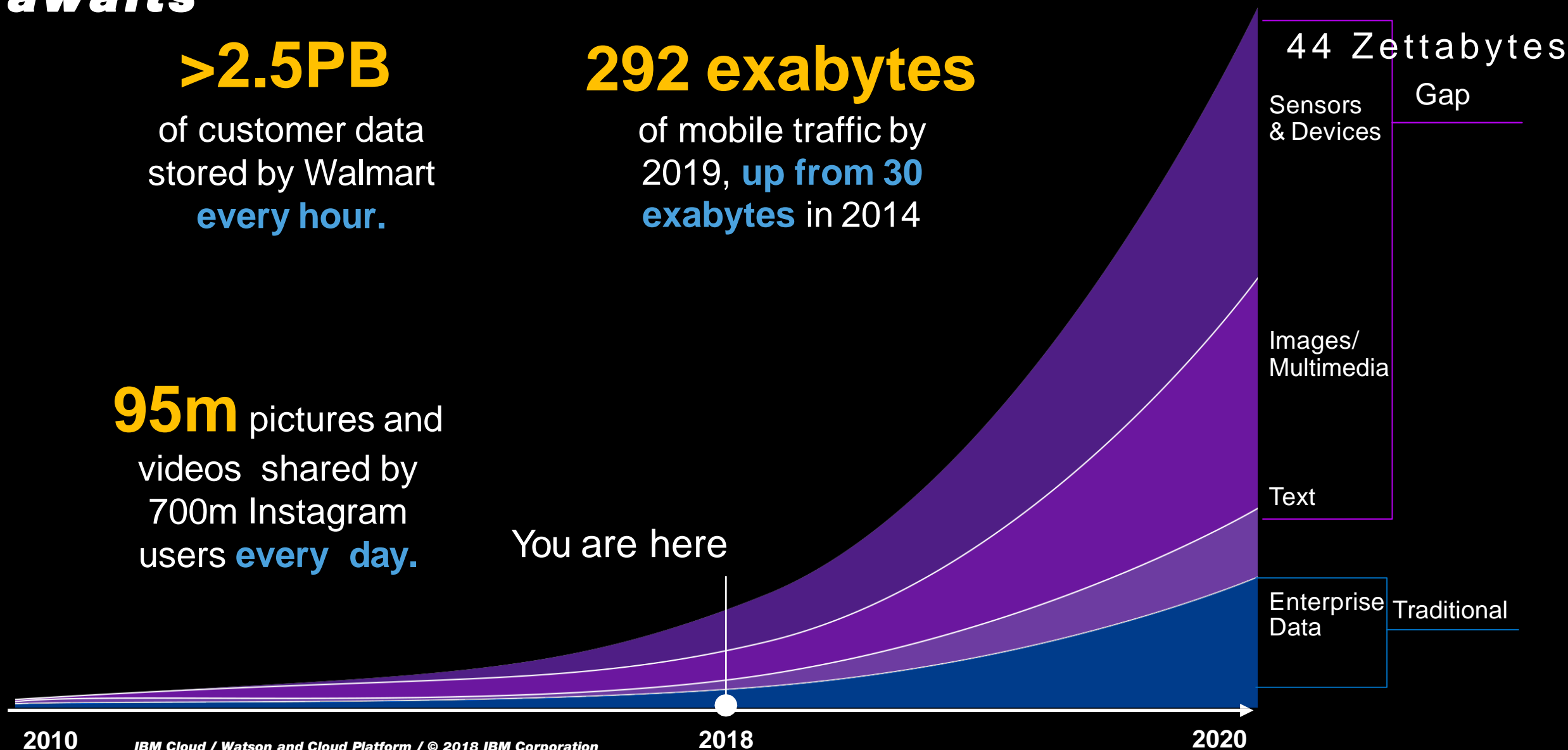
>2.5PB of customer data stored by Walmart **every hour.**

292 exabytes of mobile traffic by 2019, **up from 30 exabytes** in 2014

95m pictures and videos shared by 700m Instagram users **every day.**

44 Zettabytes

Gap

Sensors & Devices

Images/ Multimedia

Text

You are here

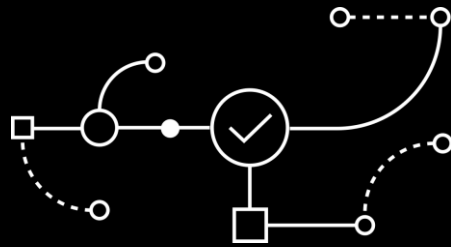Enterprise Data — Traditional

2010

2018

2020

Data is the new Fuel
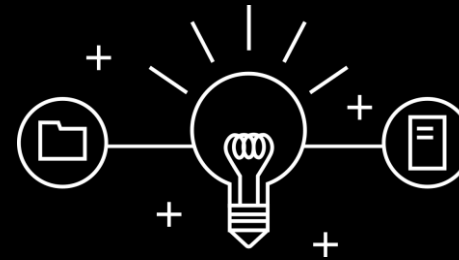# Artificial Intelligence is the new Electricity

UNDERSTAND

Cognitive systems
understand
imagery,
language and
other
unstructured data
like humans do.

REASON

They can reason,
grasp underlying
concepts,
form hypotheses,
and infer and
extract ideas.

LEARN

With each data point,
interaction and
outcome, they
develop and
sharpen expertise, so
they never stop
learning.

INTERACT

With abilities to see,
talk and hear,
cognitive
systems interact with
humans in a natural
way.

Why Fashion needs AI?

The lines between content and commerce are blurring

Understanding and engaging with User Generated Content (UGC) results in higher conversion

AI can learn insights and trends from natural language and visual

The future of trend prediction will come from tech innovators, not fashion designers

AI Patterns

1. Digital Experience
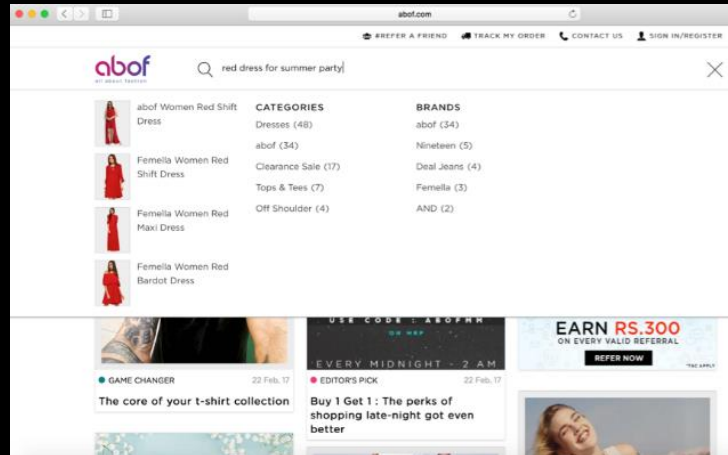
2. Data Insights & Trend Identification

3. Product Design

Digital Experience: Guided shopping

The North Face and Watson guides customers to find the perfect jacket by asking where and when you're going to use the jacket, and whether you're looking for men's or women's, and what sort of activities you plan to engage in.

Interactive NL Search

Customers could search and ask natural language questions about abof's unique product assortment, and receive custom responses to their inquiries. For example, a customer could type, "show me women's red sheath v-neck sleeveless dresses"

Outfit Recommendations
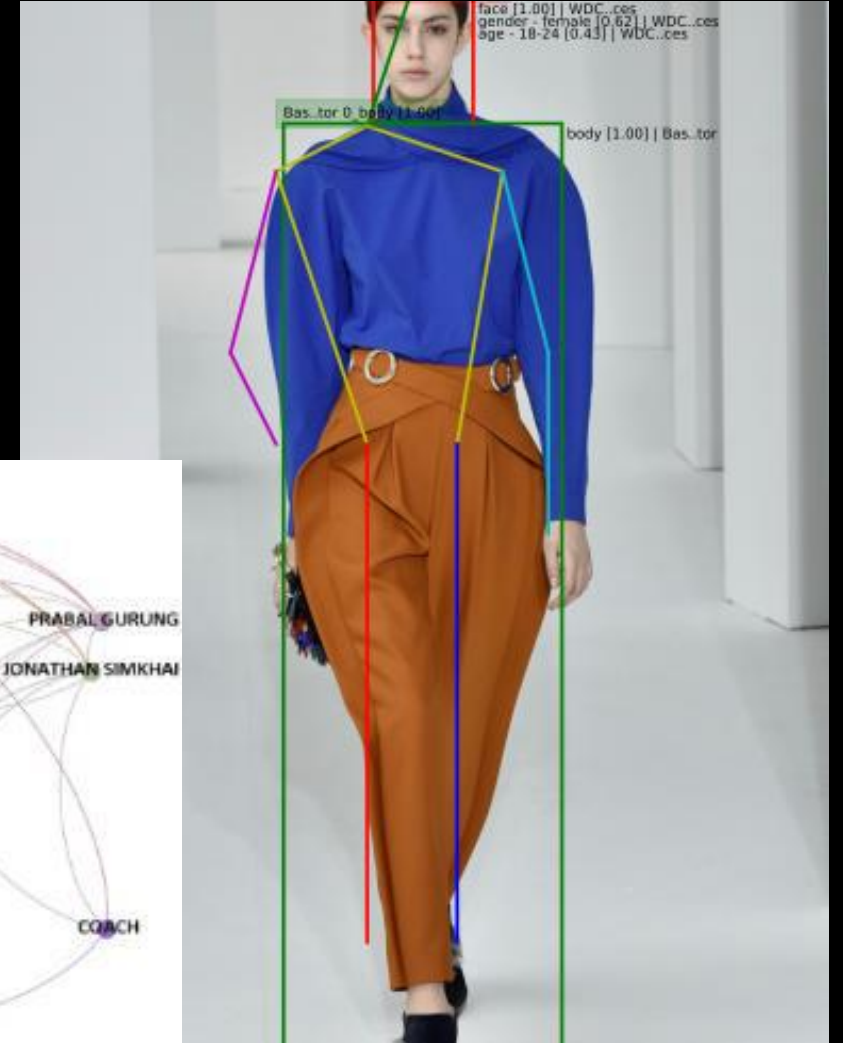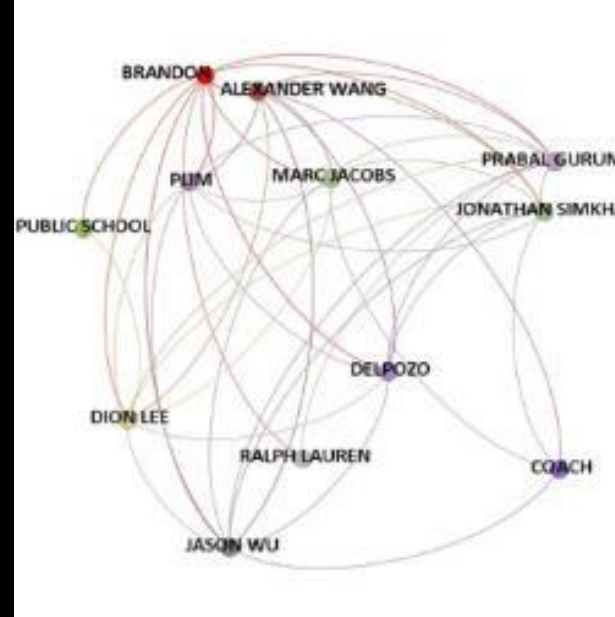
Customers can not only search through natural language questions but also search for similar visual patterns from the Quancious catalogue.

Visual Browse

Data Insights

During New York Fashion Week, Watson provided an runway show worth of insights in less than an hour when it determined the dominant colors, prints, and patterns featured in the thousands of images from the event. Watson even analyzed the similarities between 12 designers and how they are influenced by each other.
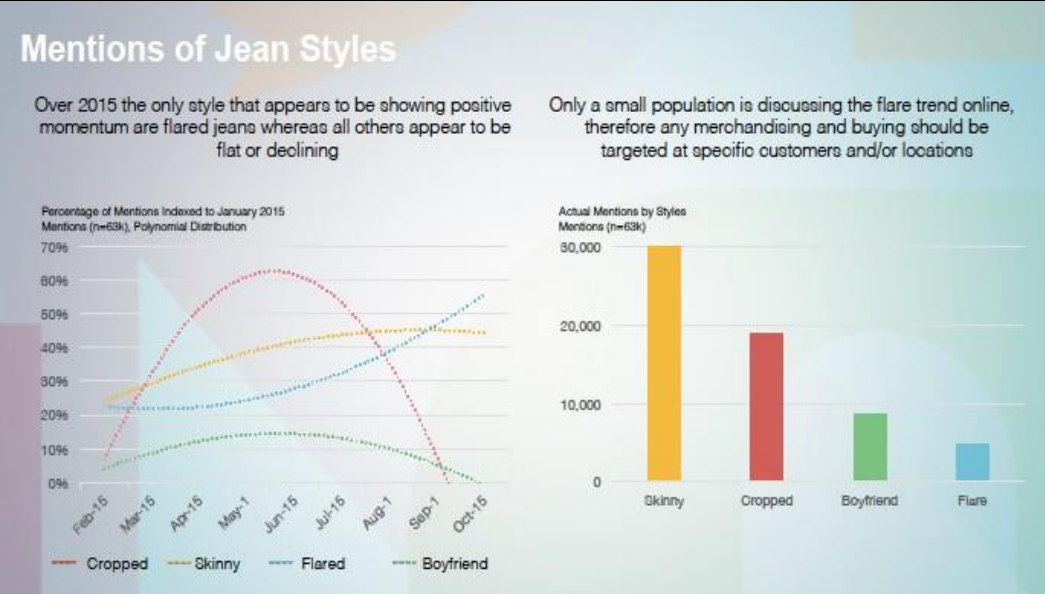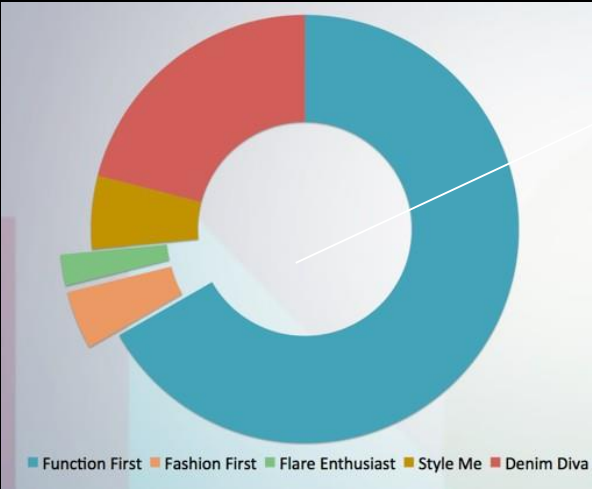
Trend identification

Identify **trending styles** based on social mentions and activity

Mentions of Jean Styles

Over 2015 the only style that appears to be showing positive momentum are flared jeans whereas all others appear to be flat or declining

Only a small population is discussing the flare trend online, therefore any merchandising and buying should be targeted at specific customers and/or locations

Percentage of Mentions Indexed to January 2015
Mentions (n=63k), Polynomial Distribution

Actual Mentions by Styles
Mentions (n=63k)

— Cropped — Skinny — Flared — Boyfriend

Develop **persona** related to overall product category

Function First (41,800)
Fashion First (2770)
Flare Enthusiast (1470)
Style Me (3465)
Denim Diva (13,150)

■ Function First ■ Fashion First ■ Flare Enthusiast ■ Style Me ■ Denim Diva

Identify **clusters** with positive sentiment towards identified trend.

Cluster
■ Fashion First
■ Flare Enthusiast

Social Voice Mentions
75 — 2,010
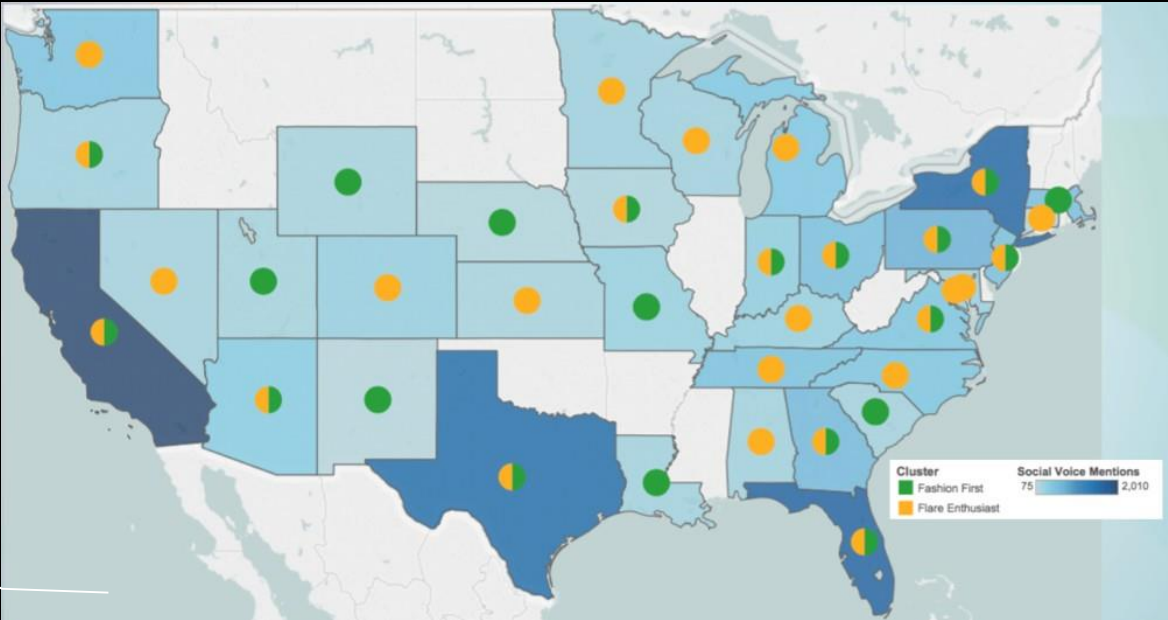
Product Design: Light up the Night

MARCHESA

- Scaled past design images to identify color palette and link to emotions

- Accelerated fabric research best suited for dress design

- Socially "aware" dress that changed colors based on live social sentiment

JASONGRECH created his most successful evening wear collection "ever" with Watson

- Watson helped Grech understand the latest and next season's runway trends

- Watson drew insights from ten years of runway fashion images and real-time social buzz to push Grech use a color palette he would not have considered before

- Jason's design process dropped from 28 days to just four (600% improvement)

- The two most popular colors from this collection Maximum Blue Purple and Unbleached Silk are selling 3x as much as Black.

The Cognitive Collection
designed by

JASONGRECH + IBM Watson

Falguni Shane Peacock: The Future of Bollywood Fashion

Analysis of 600,000 images from London, Paris, Milan, and New York fashion weeks

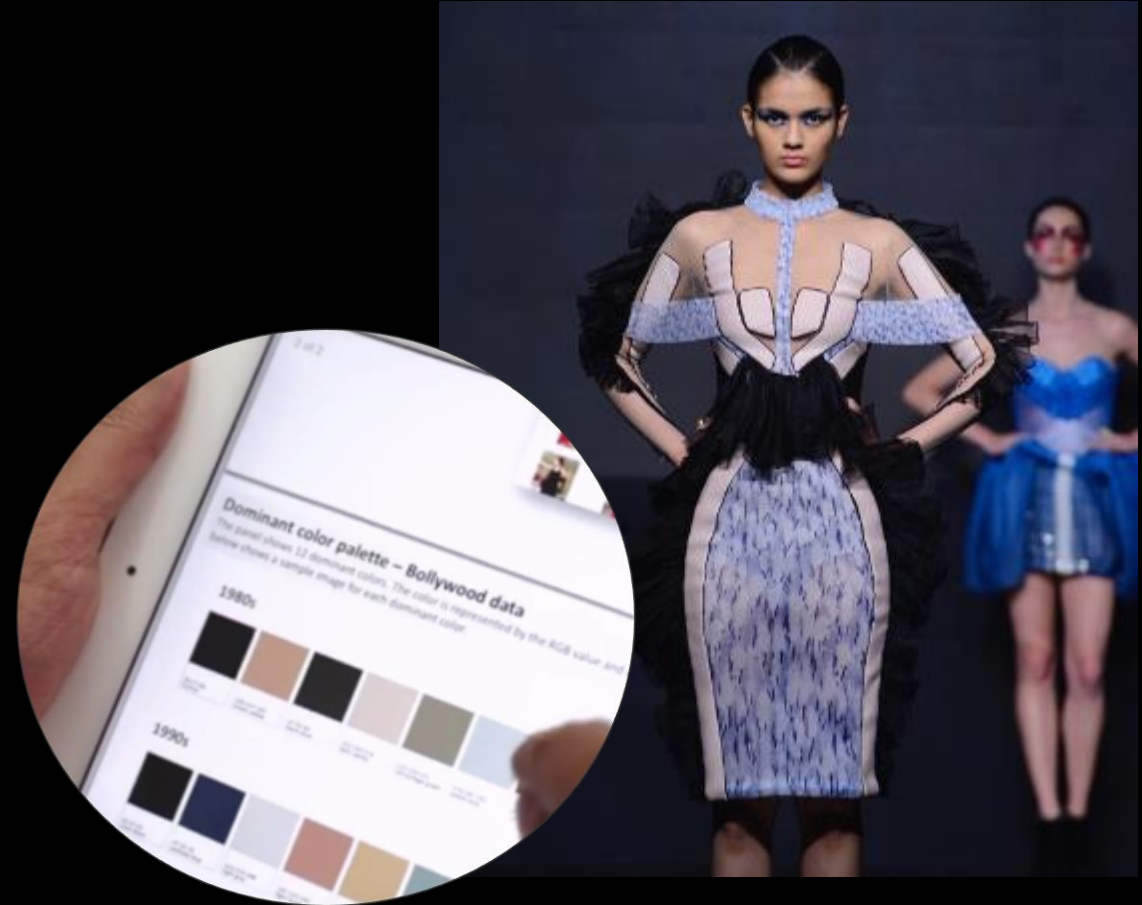+ 8,000 Bollywood images from social-media sites

+ images from Bollywood posters from the past four decades

+ analysis of 100,000 print swatches

= entirely unique prints and patterns

= 3 unique dresses

Months of manual research into mere seconds of data analysis

Cognitive Couture

Getting Started

IBM Watson

We propose to use IBM Design Thinking approach to identify the business priorities for initial cognitive use cases

- *A proven approach with core practices specific to IBM*
- *"Co-creation with customers" and "testing and learning" is at the heart of our principles*
- *This is a human centered framework for moving from design to operations*
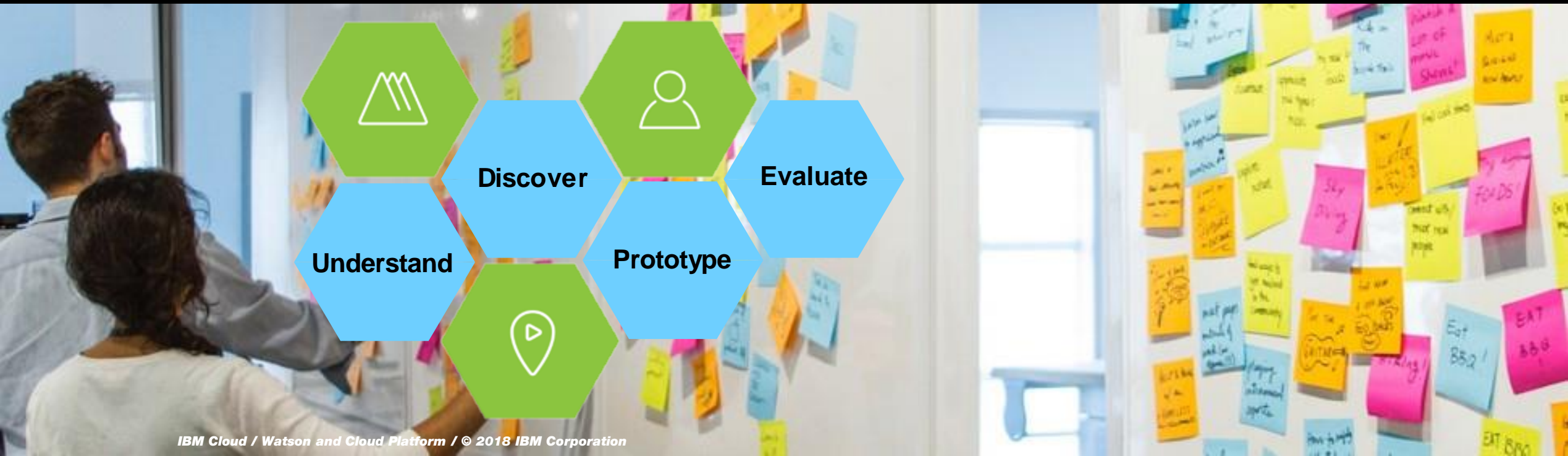
IBM **Watson**®

Get started today www.ibm.com/watson