

June 13, 2017

Humanitarian Big Data

June 2017

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Agenda

Introduction

Analytics in humanitarian context

Demos

DXC.technology very brief overview










Introduction

Impacts to your business

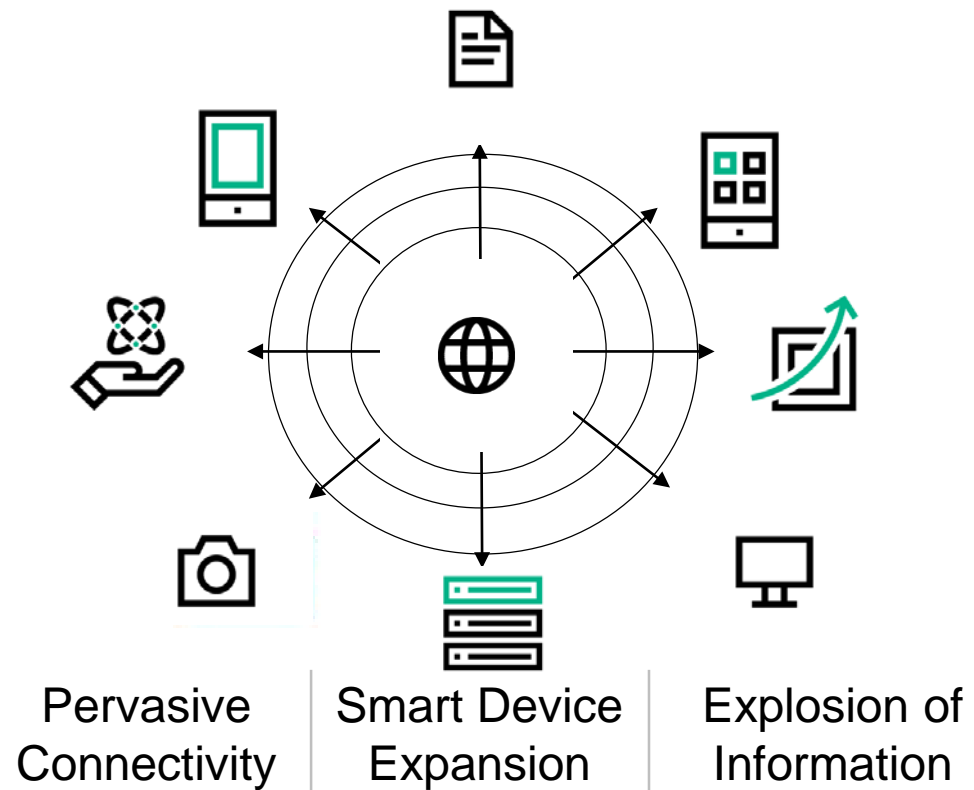
With the “4 V’s” of Big Data: volume, velocity, variety, value

Now


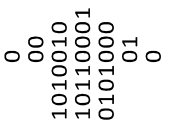


Every 60 seconds

-  277,000 tweets
 -  2.46 million pieces of content
 -  11million instant messages
 -  4 billion Google searches
 -  204 million emails sent
 -  1,820TB of data created
 -  217 new mobile web users
- Internet of things**

Growing Internet of Things



By 2020

-  **30 Billion**⁽¹⁾
Devices
-  **40 Trillion GB**⁽²⁾
DATA
-  **10 Million**⁽³⁾
-  ... for **8 Billion**⁽⁴⁾

A new style of IT is required to handle the “4Vs”

The 5th v: **Veracity**

Veracity refers to the uncertainty surrounding data, which is due to data **inconsistency**, **incompleteness**, **authenticity**, **origins/reputation**, **availability**, **accountability**, etc. which leads to another challenge, keeping big data organized and ensure **confidence** and **truthfulness** of the data used.



Analytics in humanitarian context

Analytics in humanitarian context

Exploiting big data can be essential in humanitarian to develop insight

No dedicated humanitarian data, compared to private sector (e.g. sales summary, call centers, insurance claims, etc.)

It's more about the **who, where, when** and **what**

By utilizing large datasets such as telephone records, sensors, social media, and others in combination with traditional datasets, big data can **enable deeper analysis** into the humanitarian system

Using big data in humanitarian context has the following benefits

Anticipation and risk prevention/reduction

Increase efficiency and effectiveness in response

Adjust plans and resources

Shape communications, messages to targeted audience (e.g. population of concern, donors)

etc.

Big Data is a strategy

.. not a project

Big Data requires a solid architectural foundation but not only as it might be **bigger than «just the data»**

-Legal aspects

-Is a data policy in place within the organization?

-Ethical aspects

-Data protection and privacy challenges

-Political aspects

-Is there any agreement with government and partners?

-Staff Knowledge

- Is there staff with knowledge necessary to facilitate the big data pipeline

-etc.

Humanitarian Analytics Typical Use Cases

Predictive Analytics

- Situational awareness** allowing early detection of sudden- and slow-onset
- + Alert and improve preparedness
 - + Speed-up aid deployment
 - + Physical security and surveillance
 - + Unlock the unknown

Building Blocks

- Traditional / social media monitoring
- Internal Channel monitoring
- Machine Learning

Data Analytics

- Interview analysis** (audio or text)
- + Identify crime information
 - + Identify trends and correlation
 - + Unfold potential relationship between interviews
 - + Data disaggregation

Building Blocks

- Natural language processing
- Concept extraction
- Pattern analysis
- Multiple data sources ingestion

Sentiment & Trend Analytics

- Fundraising analytics** to understand donor behavior
- + Improve donor relationship
 - + Understand connection between people and what are the cause they care about
 - + Measure fund raising campaign perception and outcome

Building Blocks

- Social media monitoring
- News feed monitoring
- Predictive analytic

Near-Real Time Analytics

- Needs assessment**
- + Identify and locate population's need faster
 - + Identify gaps, preposition assistance
 - + Recover faster, adapt as situation evolves
 - + Improve field action effectiveness

Building Blocks

- Traditional / social media monitoring
- Natural language processing based on assistance ontology

Demos



Use case

Social Awareness

Purpose: Generic social network and news media monitoring

Sentiment Analysis

Purpose: Analysis of perception of Ebola during the crisis

Reputation analysis of humanitarian agencies

Purpose: Analysis of humanitarian agencies reputation globally and in specific situation

Need Assessments

Purpose: Identify and measure needs in Syria and Libya

Known the unknown

TBD

Reputation Monitoring and Needs Assessment Overview

Only Twitter was used as its freely available and we collected data based on

UN Agency's accounts (e.g. UNICEF)

Set of Libyan, Syrian and relevant journalist and humanitarian accounts

Humanitarian keywords (e.g. shelters)

and relevant geographical names (e.g. Libya/Syria country names but also district)

Focused on English only

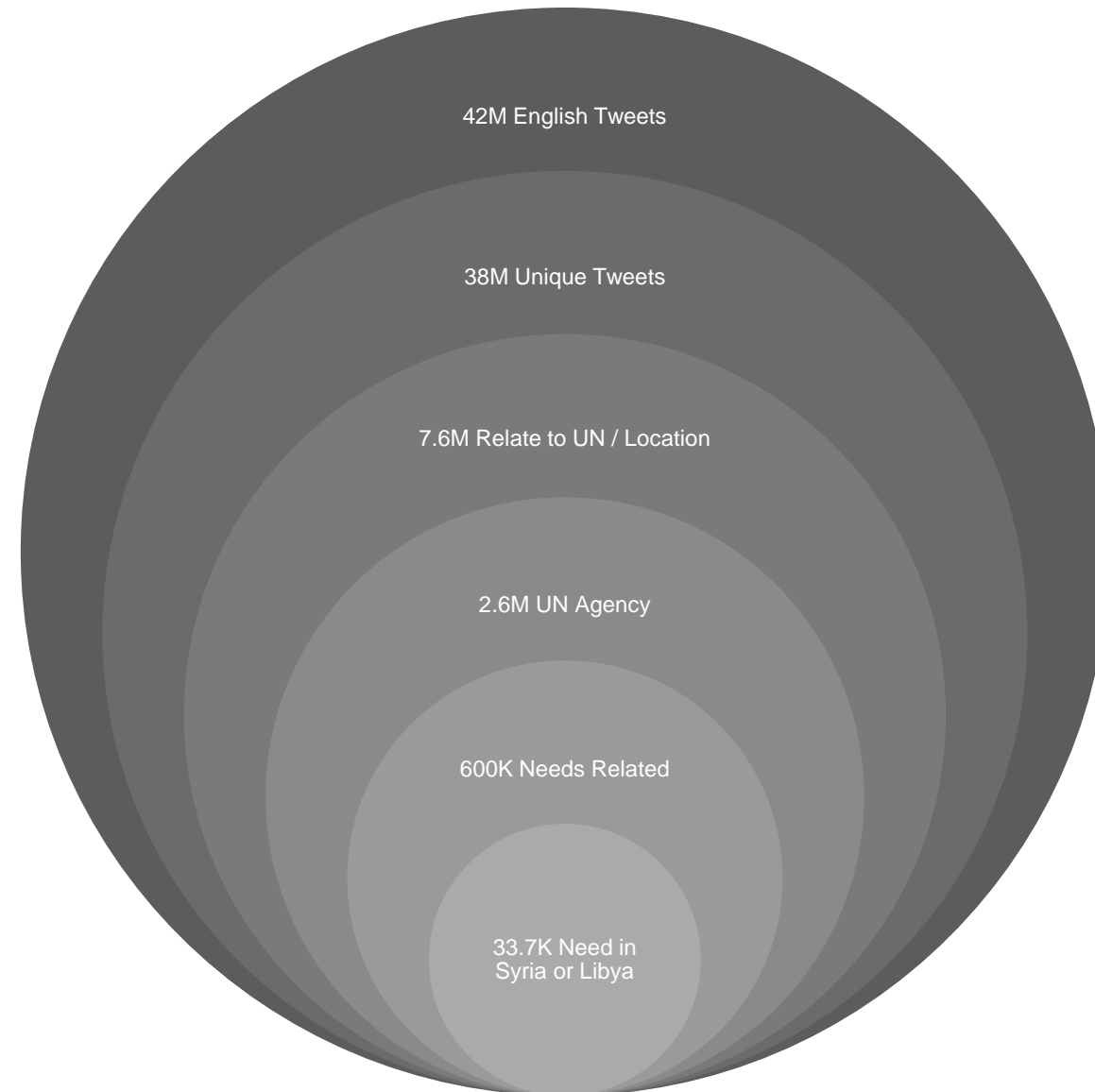
2 months of Tweets (February – April 2016)

Using the public API of Twitter (5%-40% of tweets)

Very few tweets are geo-localized (globally about 5-10%)

Reputation Monitoring and Needs Assessment

Some Metrics



About the sources...

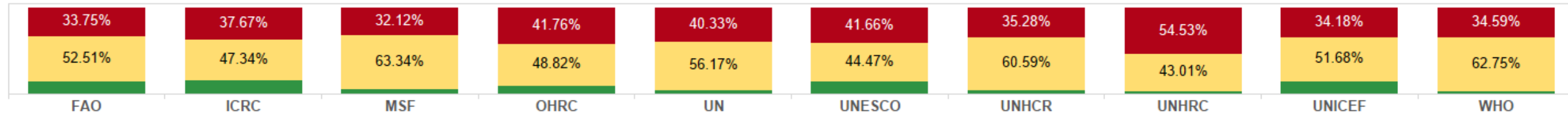
The social acceptability of topics plays an important role in the scope of possible analysis: while queries related to issues such as shelter or food returned results of consistently high quality, some WASH, protection and health issues **could not be easily monitored as they were not discussed publicly.**

Social media could provide significant value to decision makers. However, as the information landscape is fragmented, it is important to have **more information to develop more precise** dashboard/recommendation.

As for any other kind of analysis and assessment, one source (e.g. Twitter) alone cannot depict a precise situation. It's just one piece of the puzzle and **knowing its limitations and bias is essential.**

Demos Screenshots

What is the reputation of the UN agencies in the monitored period?

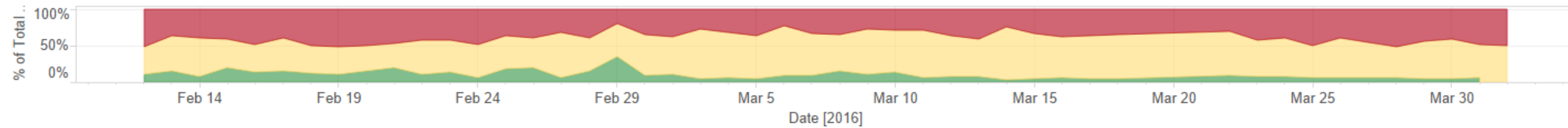


Filters

Start date
2/1/2016

End date
4/1/2016

Reputation over time

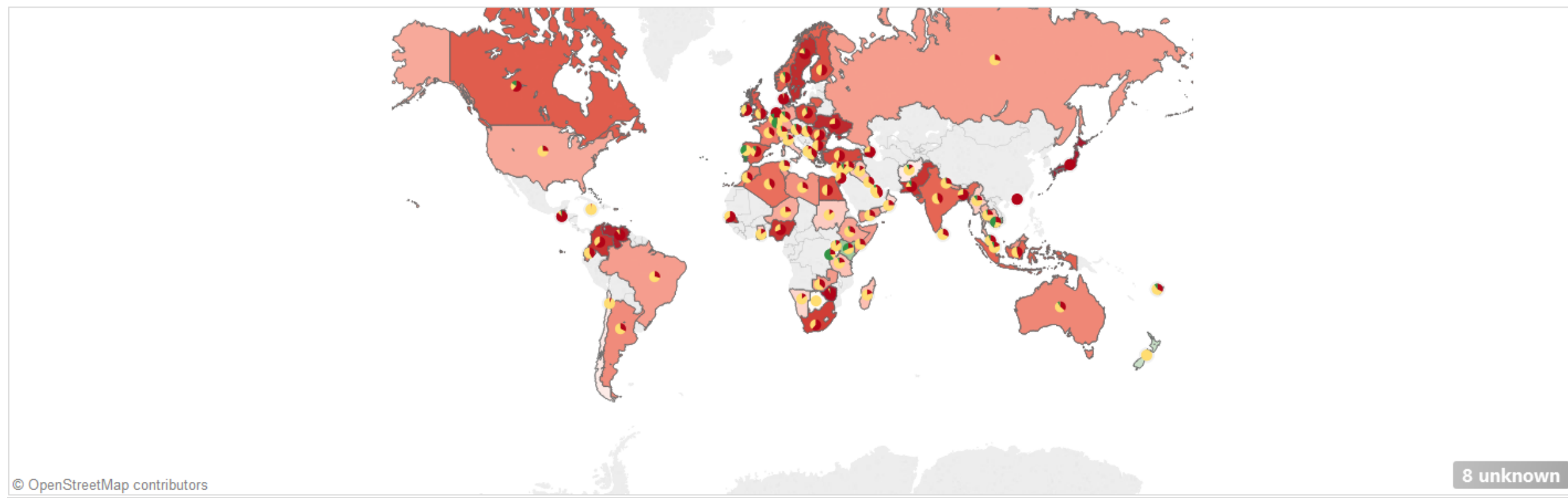


Legend

ReputationPolarity

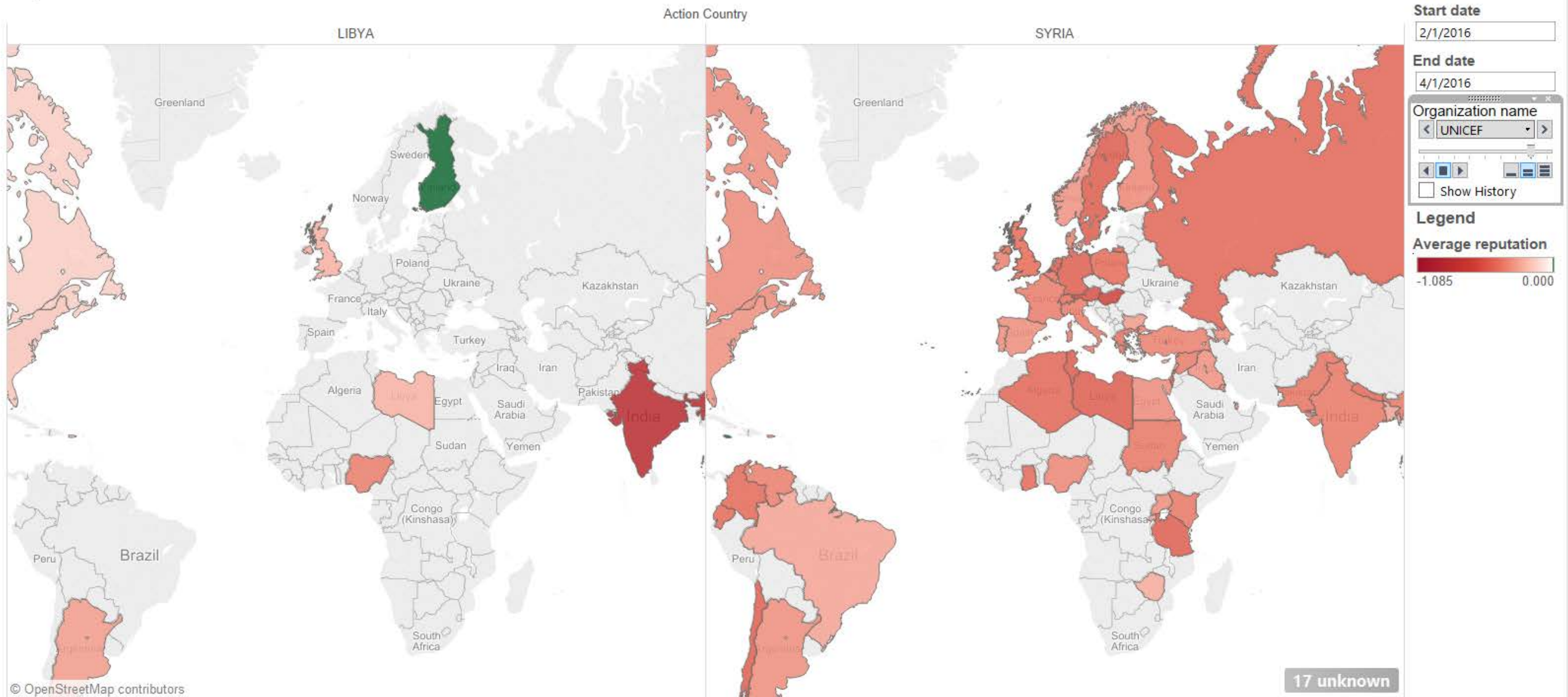
- Negative
- Neutral
- Positive

Reputation per country

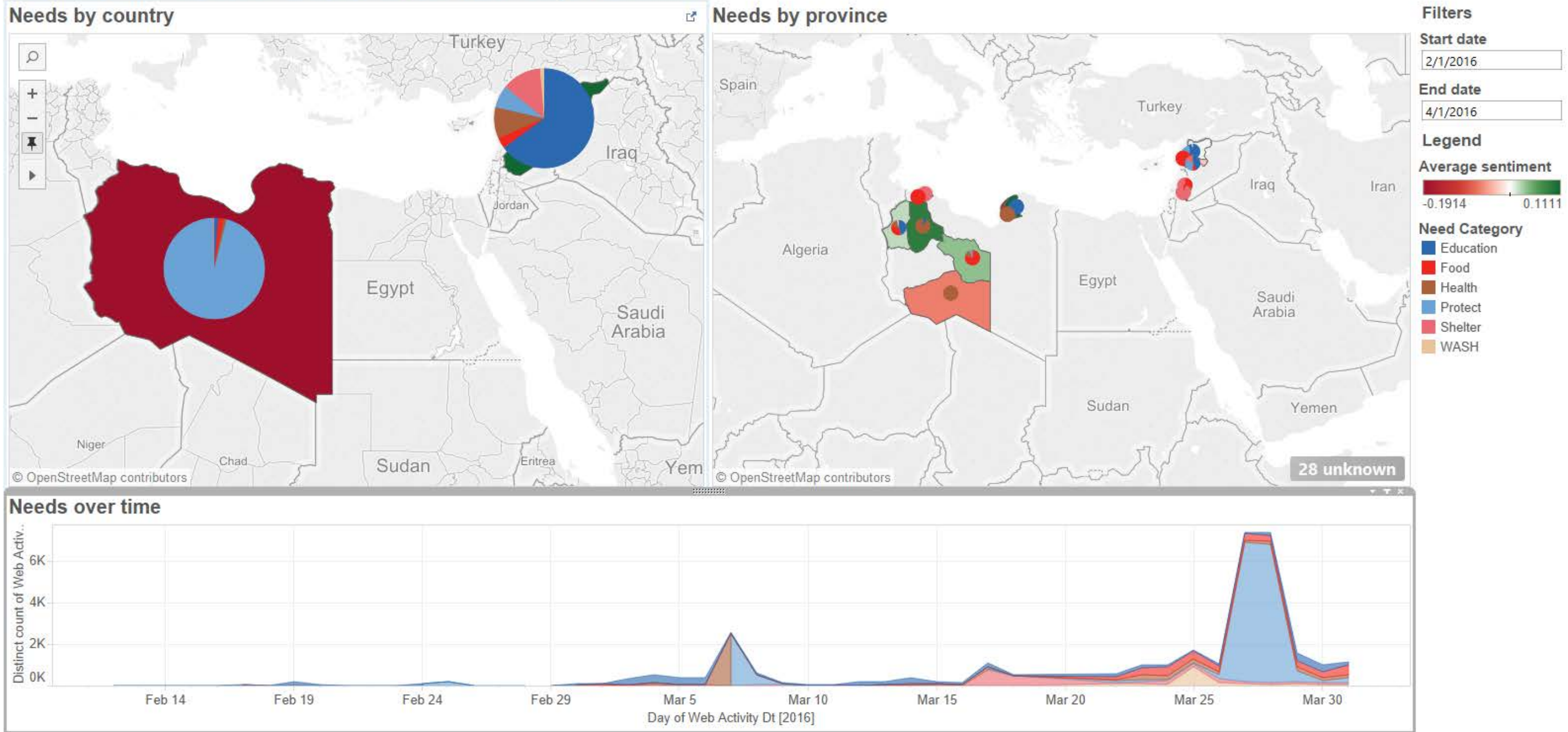


How the agency's actions in a given country is perceived by the community

Reputation of the UNICEF



What were the needs in the monitored period?



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Leading our clients' digital transformations

DXC Technology Corporate Overview

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DXC Technology at a glance

DXC
LISTED
NYSE

\$25B
GLOBAL IT
SERVICES LEADER



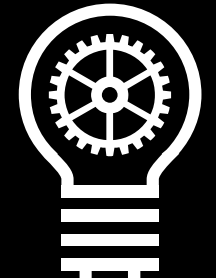
250+
PARTNER NETWORK WITH
BEST-OF-BREED PARTNERS
14 STRATEGIC PARTNERS



~6,000
CLIENTS
200+ Fortune 500 companies



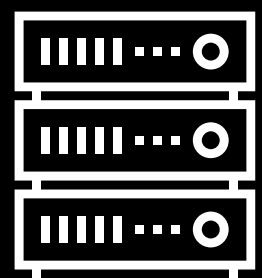
60+
YEARS OF INNOVATION



170,000+
EMPLOYEES
WORLDWIDE



91
DATA CENTERS



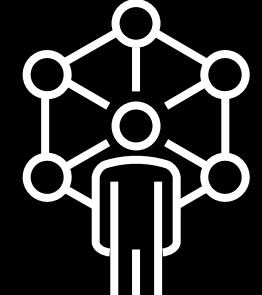
37
STRATEGIC
DELIVERY CENTERS



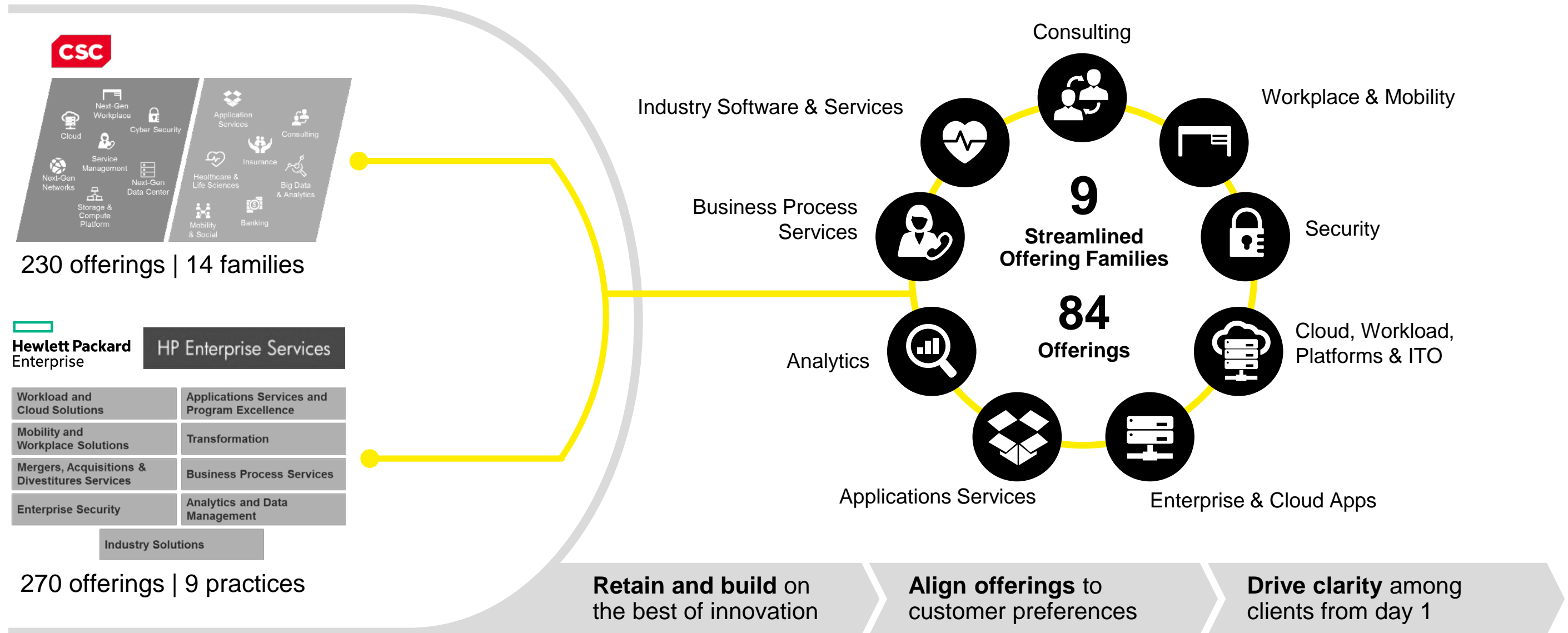
70+
COUNTRIES



3,600+
CERTIFIED PROJECT
MANAGERS



Streamlined offerings combine best innovations from CSC, HPE-ES and partners



Industry-focused services and solutions



Insurance

We're the No. 1 provider of core insurance software and services globally. We support growth, speed to market and efficiency through digital insurance solutions and business process services.



Healthcare & Life Sciences

We provide industry-leading software and business process services to providers, payers, government health and life sciences firms. We focus on clinical care and operational efficiency with digital care transformation solutions.



Travel & Transportation

With 40+ years of industry experience, we support mission-critical systems for top airline, consumer travel, freight and logistics, and railway firms. Our services help clients support growth and transform operations.



Public Sector

We're one of the world's leading independent IT services providers to all levels of government agencies. We provide secure, 24x7 support to mission-critical systems and operations.



Energy

We've supported more than 400 energy businesses worldwide over 20+ years. Our solutions help clients rapidly seize market opportunities, gain competitive advantage and evolve with new business models.



Banking & Capital Markets

A leading provider of banking software and front-office managed trading solutions, we support banking and capital markets clients with 30+ years of industry experience, specialized services and resources to make transformation happen.



Manufacturing

A leading IT services provider to automotive, aerospace and defense, industrial, high tech and chemical firms, we combine deep expertise in manufacturing, connected products, analytics and security to help clients drive innovation.



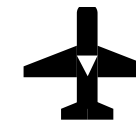
Consumer Products & Retail

We help the world's leading consumer packaged goods and retail firms focus on consumer experience and help clients seize opportunities in the face of disruptive digital trends.



Communications, Media & Entertainment

We provide innovative business solutions to the world's leading communications, media and entertainment firms to transform their business, redefine the customer experience and capitalize on digital convergence.



Aerospace & Defense

A leading IT services provider to A&D firms, we help clients shorten time to market, gain insight from data and adopt digital technologies to accelerate innovation across manufacturing and supply chains.