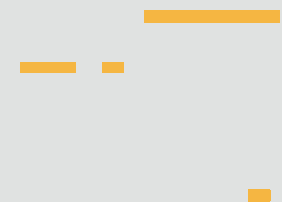# Oracle OpenWorld 2019

SAN FRANCISCO

ORACLE

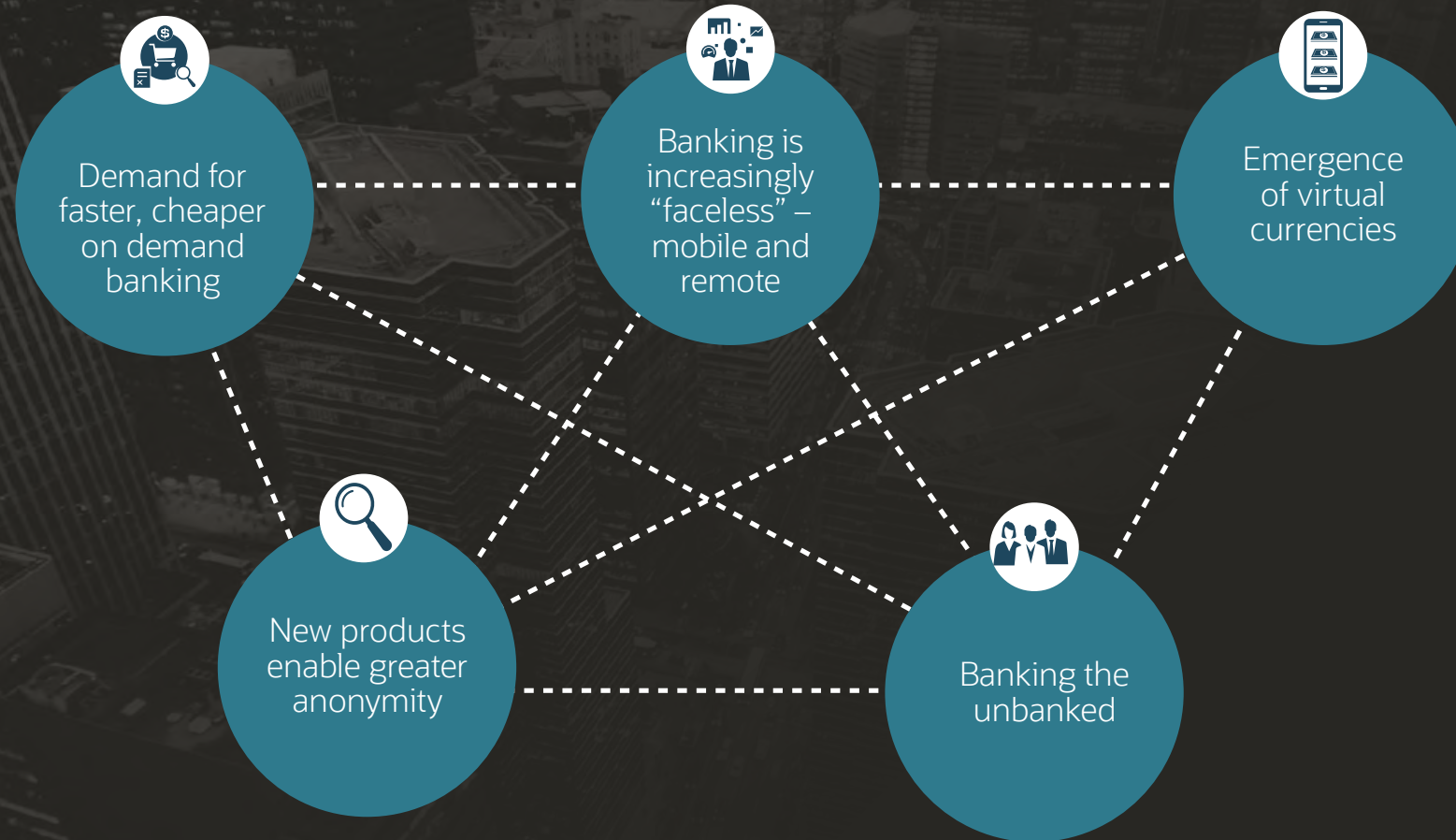# New Tools for the Fight Against Financial Crime

Allen Sellars

Product Management Director
Oracle Financial Crimes and Compliance

Safe Harbor

The following is intended to outline our general product direction. It is intended for information purposes only, and may not be incorporated into any contract. It is not a commitment to deliver any material, code, or functionality, and should not be relied upon in making purchasing decisions. The development, release, timing, and pricing of any features or functionality described for Oracle's products may change and remains at the sole discretion of Oracle Corporation.

Statements in this presentation relating to Oracle's future plans, expectations, beliefs, intentions and prospects are "forward-looking statements" and are subject to material risks and uncertainties. A detailed discussion of these factors and other risks that affect our business is contained in Oracle's Securities and Exchange Commission (SEC) filings, including our most recent reports on Form 10-K and Form 10-Q under the heading "Risk Factors." These filings are available on the SEC's website or on Oracle's website at http://www.oracle.com/investor. All information in this presentation is current as of September 2019 and Oracle undertakes no duty to update any statement in light of new information or future events.
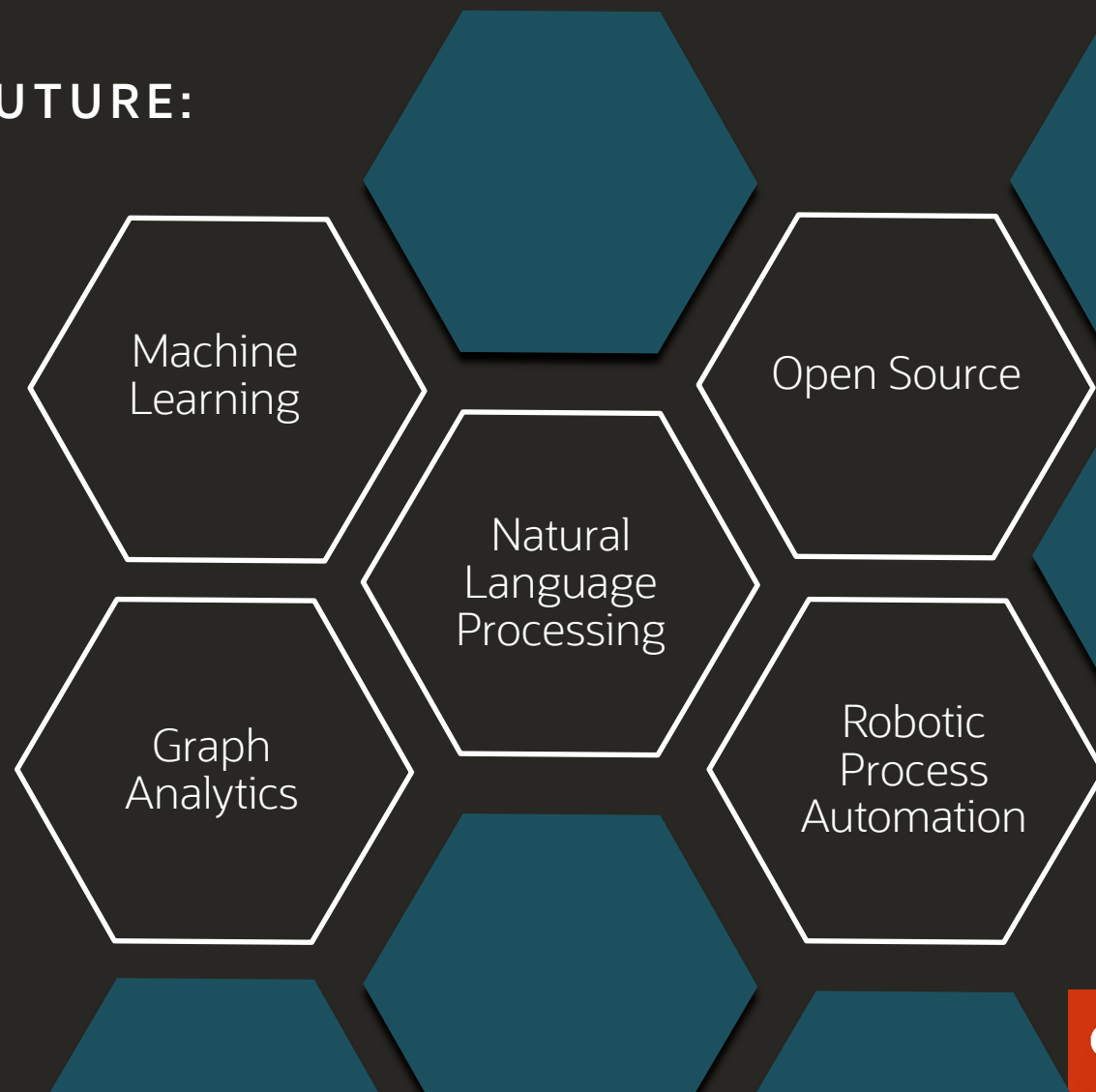
The Impact of New Technology on Financial Crime

Demand for faster, cheaper on demand banking

Banking is increasingly "faceless" – mobile and remote

Emergence of virtual currencies

New products enable greater anonymity

Banking the unbanked

Technology helps the good but can also enable the bad

We Need a New Approach to Fight Financial Crime

BEFORE:

✕ Pure Rules Based

✕ Slower Adoption Cycles to Evolving Criminal Behavior

✕ Lack of Deployment Option

FUTURE:

- Machine Learning
- Open Source
- Natural Language Processing
- Graph Analytics
- Robotic Process Automation

The Challenges At Hand

Augment current capabilities with new innovation at *the market's pace*

Leverage Open Source to drive integration and an inclusive ecosystem

Develop processes to match current and future transaction volumes

Deliver innovation to every user

Our Response: FCC Studio

Innovation Applied at Scale

- Graph Analytics & Machine Learning as core capability
- Manage Data Deluge

More Capability to Collaborate

- Create partner ecosystem to bring new capabilities faster
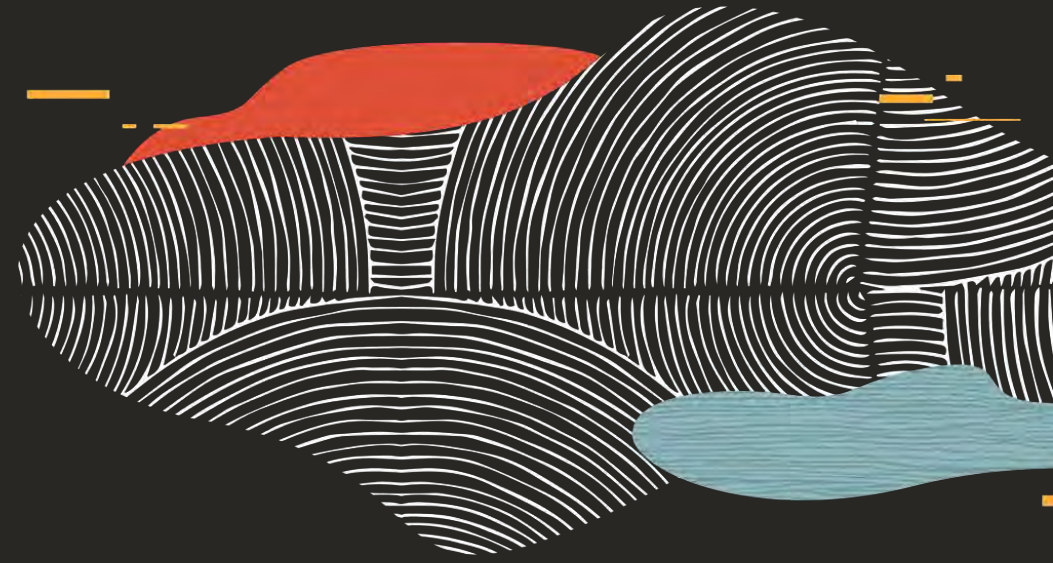- Allow customers to fully leverage the best in open source

Inclusive Infrastructure

- More deployment options
- Leverage existing data sources
- Enable quick wins

Financial Crimes and Compliance Studio

Why Graph and FCC Studio?

Our interactions daily are more visualized

Unparalleled anomaly detection with graph algorithms and patterns

Connecting to data is a few clicks away

FCC Studio Platform Functionality

Machine Learning

Spark, ORE, R, Python
Deep Learning, Network Similarity

Graph Analytics

Pattern Matching, PGX, Graph
Based Investigations

Data Discovery

Data Visualization
Graph Questions
Graph Pattern Discovery

Rapid Deployment

Notebooks in Batch
REST Interface
Expose Widgets

Modeling

Create Models
Visualize Output
Models AAS

Explainability

Explainability toolkits
Code & Result Transparency

Leverage Fragmented Data

Replicates Oracle RD FCDM
Sits on Data Lake
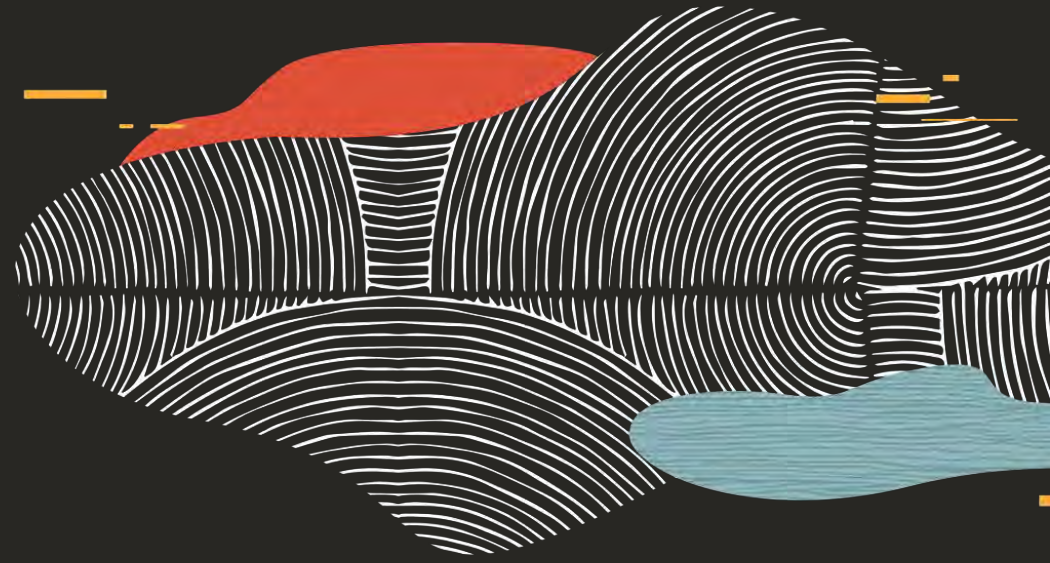Connect to Any Data Set
Structured or Unstructured

Collaboration

Notebooks Are Easily Shareable
Users Can See Original Code,
Original Results and
Independently Execute Again

Innovation Applied

Legacy Process

Detection	Generate Alerts	Investigation	Advanced Analytics

Rules Based Scenarios	Assign Alerts with Simple Rules	Assign Cases with Simple Rules	Reporting
External Threshold Validation	Single Alert Assessment	Manual Aggregation	Tuning

Innovation Applied for Detection

Scenarios on Graph

Adaptive Models that score customers

Allow for scenarios in any language, transparently
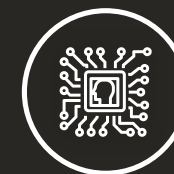
(author, test, document, deploy in one place).

Make rules based scenarios more effective by:

- ATL/BTL
- Providing explainable prediction around effective events

Execute on Big Data & Fragmented Data Sets

Entity Resolution

Innovation Applied for Investigation

Reduce time of Human Data Gathering

Build Smarter Cases

Transparent Search across all data

NLP Briefings and Chatbot Assistants

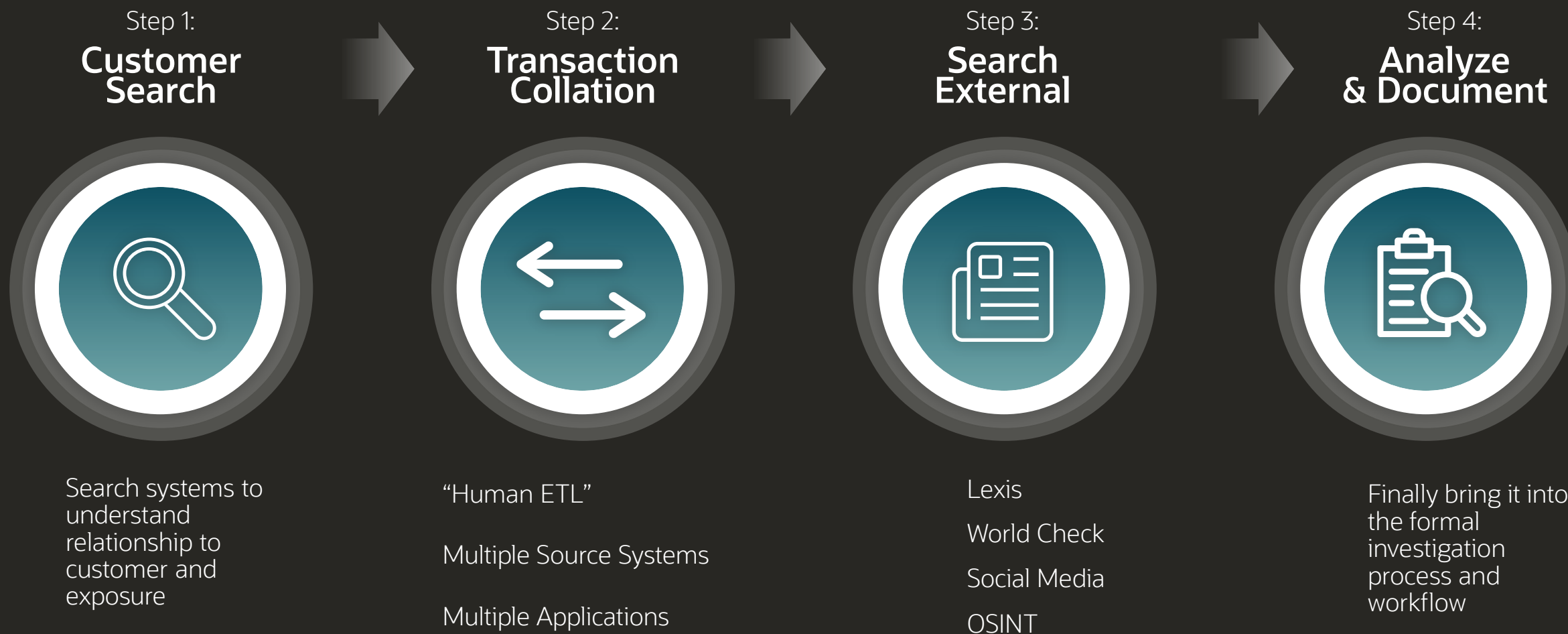Enable Automated Case Recommendations and Decisioning

Automated SAR Monitoring

Entity Resolution

Legacy Investigation Process

Step 1:
Customer Search

Step 2:
Transaction Collation

Step 3:
Search External

Step 4:
Analyze & Document

Search systems to understand relationship to customer and exposure

"Human ETL"

Multiple Source Systems

Multiple Applications

Lexis

World Check

Social Media

OSINT

Finally bring it into the formal investigation process and workflow

Our Investigative Process

Data Lakes

Other Internal Sources (Data/Img)

Other External Sources

Innovation Starts With Graph
Enterprise Global Graph

CUSTOMERS

TRANSACTIONS

ACCOUNTS

ALERTS

WATCHLISTS

NEG.NEWS

UBO REG

WATCHLISTS

FINANCIAL CRIME GRAPH

Oracle Investigation Hub

Collate   Analyze   Discover   Document

Step 1
Comprehensive Search

Step 2
Analyse, Discover, Document

Notebook can be extended with visualizations, standard statistics, graph algorithms, scoring models.

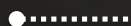Graph/Notebook Includes Neg News Hits, Social Media Profiles, Etc

Investigator

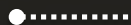# Innovations Applied for Advanced Analytics

Turbocharge Modeling

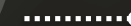- Library of Features
- Explainable AI

Deep Learning On Graphs

- Case Similarity
- Outlier & Jumper Detection
- External Entity Resolution & Clustering

Innovation Applied for Collective Intelligence

Shared Global Graph using privacy to collapse entities

Reputational Identity Score Among Firms
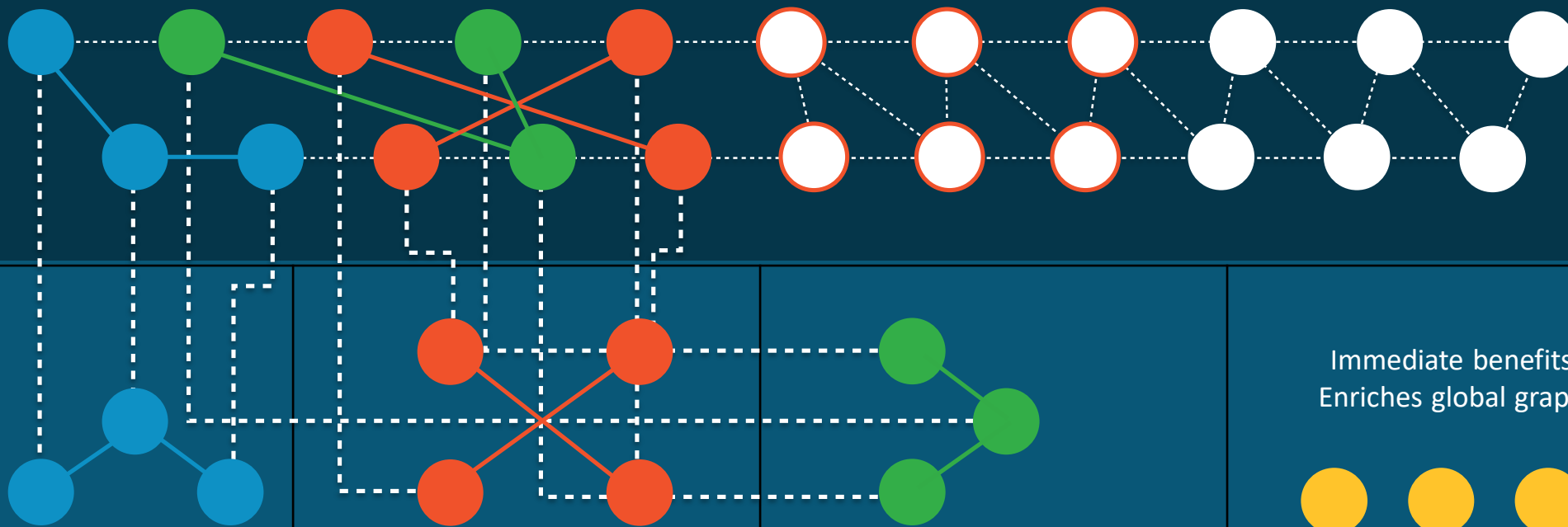
Named Entity Recognition on Public & Private Data

Detection on "Grand Financial Graph"

Collective Intelligence

Shared Global graph using privacy-preserving ER to collapse entities

External watchlists, sanction lists, etc. e.g. WorldCheck

NER on public & private data e.g. EDGAR

Immediate benefits
Enriches global graph

Bank 1

Bank 2

Bank 3

New Participant

In Summary

Provides greater value and insights from your data than from traditional methods

These innovations drive efficiency, effectiveness and collaboration

Collective Graph Intelligence is the next breakthrough

Related Graph Sessions

Stop by the FCCM Demo Booth to see FCC Studio in action.

Tuesday 12:30   Using Graph Analysis and Fraud Detection in the Fintech Industry

Wednesday 10:00 Setting up Modern Anti-Money-Laundering Solutions to Service Wholesale

Wednesday 10:00 Graph Databases and Analytics: How to Use Them

Wednesday 11:15 Demystifying Graph Analytics for the Nonexpert

Wednesday 1:30   Traversing and Querying Graphs with PGQL and Gremlin with Oracle Spatial and Graph

Thank You

Allen Sellars

Product Management Director
Oracle Financial Crimes and Compliance