State of Oregon DAS
Transparency Program Assessment (Benchmark)

Final Briefing

February 27, 2020
Gartner Consulting

Meeting Agenda

Agenda

- Background
- Oregon Transparency Current State
- Summary Research Findings by Peer State
- Themes & Market Direction
- Future State Recommendations for Oregon Transparency Program
- Q&A

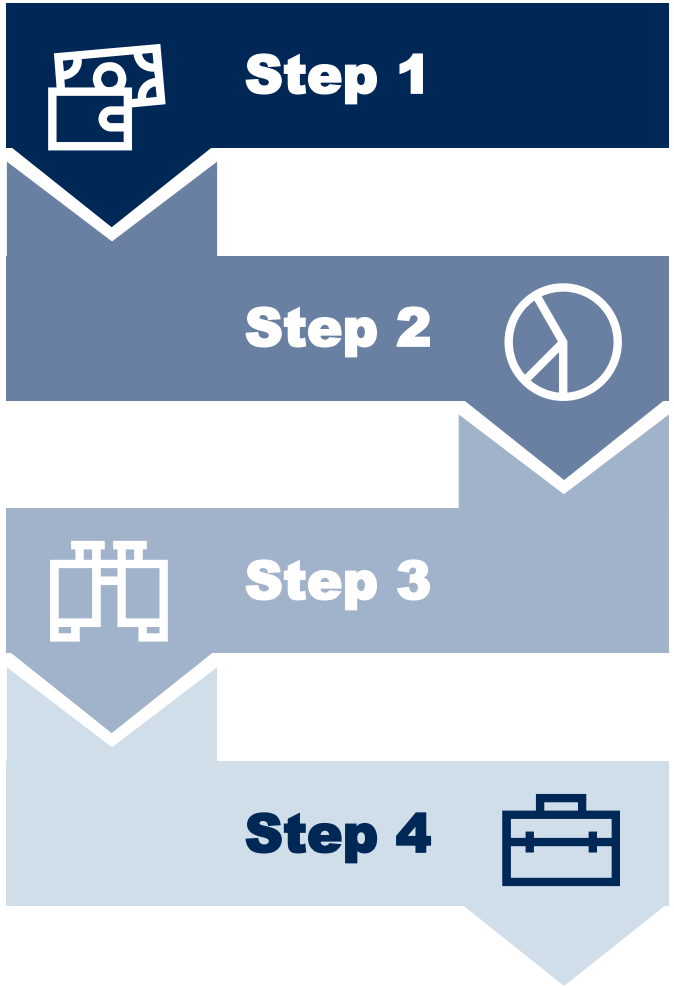
Briefing Objectives

Clarify best path forward for Transparency Program by illuminating answers to 4 key questions:

1. How does Oregon's program compare to similar programs in other states?
2. What are the lessons learned from peer organization efforts to build transparency programs in their states?
3. What are the key trends and best practices in public sector transparency programs?
4. Where are the highest value opportunities to advance government transparency in Oregon in the near term and the longer term?

Background

Gartner followed a structured approach for this benchmark



Discovery

- Interviewed CDO for Transparency Program Vision, and Transparency staff regarding current state
- Conducted initial reviews of other programs and defined criteria for benchmark peer selection

Research

- Conducted deep dive research on benchmark peers
- Prepared for and conducted benchmark interviews with 5 peer states (Arizona, California, Indiana, Utah, & Washington)

Analysis

- Compared peers across multiple dimensions to create insights into Oregon's key opportunities
- Conducted workshops to validate findings and calibrate recommendations

Deliver

- Finalized materials and prepared for final briefing

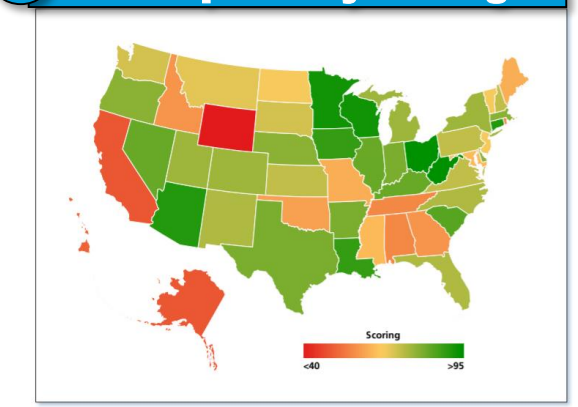
Benchmark peers were selected to maximize opportunity to understand lessons learned (missteps), as well as best practices

- Gartner reviewed multiple criteria to identify peer states worth examining more closely
- States were selected in a way that provided a variety of experiences and perspectives

Criteria for Peer Selection

1. **Transparency Rating**
2. **IT Centralization**
3. **State Credit Rating**
4. **Size of State Population**
5. **Size of State Budget**
6. **Per Capita Gov't Spend**
7. **Geographical Proximity**

1 Transparency Rating



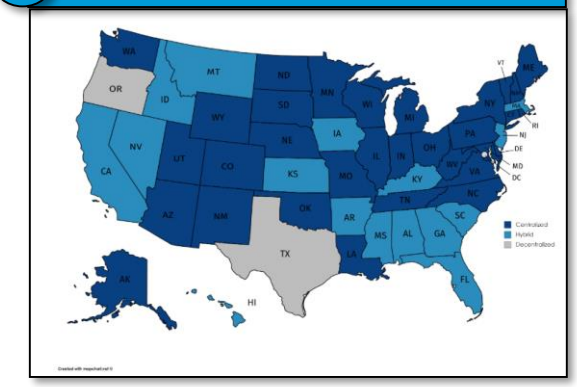
How the 50 states rate in providing online access to government spending data?

Gartner reviewed transparency ratings, including "Following the Money", and dug into specific areas where OR has the greatest opportunity to adopt new best practices, e.g., Washington is lower overall but higher in usability.

Oregon: B-
Arizona: A-
Indiana: B
Washington: C
Utah: C+
California: F*

Source: U.S. PIRG Following the Money 2018 Annual Report

2 IT Centralization



How the 50 states compare in degree of IT centralization?

Gartner reviewed a recent GovTech assessment on centralization, and made adjustments based on additional available data.

Oregon: Decentralized
Arizona: Centralized
Indiana: Centralized
Washington: Centralized
Utah: Centralized
California: Hybrid

Source: GovTech 2019

*California implemented a new transparency site since the 2018 U.S. PIRG report was published. The 2018 U.S. PIRG rating does not apply to the research conducted for review in this briefing.

Comparison of Selected Peers

O Oregon C California W Washington A Arizona I Indiana U Utah

- Peers were selected for variation to maximize learning opportunities
- In some areas Oregon is an outlier, but for the most part it was possible to flag peers similar to Oregon, as well as divergent

IT Centralization****

Oregon has unusually decentralized IT, but all states have some level of decentralization in IT.

Transparency Rating***

Oregon scores well for breadth of transparency, but lags in usability.

State Credit Rating**

Oregon is viewed as a relatively credit worthy state, though both Utah and Indiana score better.

Size of State Population**

Oregon is a relatively small state by population, though not the smallest.

Per Capita Gov't Spend**

Oregon has outlier-sized spend on government on a per capita basis.

Size of State Budget**

A small population but high per capita spending make Oregon middle of the road for overall size of the state budget.

Geographical Proximity

Two neighbors and two states in proximity were included. Indiana provided geographic variety in peers.

*California implemented a new transparency site since the 2018 U.S. PIRG report was published. The 2018 U.S. PIRG rating does not apply to the research conducted for review in this briefing.
**Size of population, per capita government spend, size of state budget, and state credit rating reported as aggregated on Wikipedia
***Ratings adopted from U.S. PIRG "Following the Money" 2018 Annual Report
****Degree of IT Centralization taken from GovTech 2019, and adjusted based on additional information

Oregon Transparency Current State

Oregon Transparency Current State

Oregon Transparency

History

Notional Timeline

2009
- HB2500 legislated Transparency website & Transparency Oregon Advisory Commission

2015
- HB3099 transfers DAS responsibilities and functions to the State CIO

2017
- Transparency Program ORS reference and website are updated

2019
- Transparency Program, Geospatial Enterprise Office and Open Data Initiative pulled into new office under a new CDO

Background

- Program established with a difficult edict not to expend budget
- Statute is prescriptive to the level of data element requirements, and dictated complexities, like adding in quasi-governmental entities
- In spite of that, Oregon is recognized as an early adopter, and has received awards for transparency

Current Scope of Fiscal Transparency

Oregon Transparency

- Audience: Constituents
- Scope: expenditure, revenue, workforce, budget, and contract information
- Data is provided from the following entities:
  - State Agencies
  - Counties (36)
  - Education Service Districts (19)
  - Higher Ed
  - Quasi-Public Entities
  - Enterprise Zones

Related Open Data & GIS Initiatives

DATA.OREGON.GOV OPEN DATA PORTAL

- State open data portal

Oregon SPATIAL DATA LIBRARY

- Geospatial data sets

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Oregon Transparency Current State (continued)

Oregon Transparency

Technology & Automation

- Socrata Data Platform underpins the transparency portal
- Implemented with tabular machine readable formats, but no visualizations, or APIs
- SFMS is the Oregon State financial system, but no automation has been established to pull data from it
- Data on Oregon's transparency site is updated on an annual basis

Operational Approach

- Different types of entities are treated differently. Agencies and participating entities sometimes provide data in Excel, Word, PDFs, direct upload to Socrata, etc.
- Data submissions are tracked in different ways depending on the entity (tracking includes extensive email folders, file Sharing tools, SharePoint, and directly within Socrata).
- The current process for stakeholder engagement includes numerous manual efforts, such as:
  - Sending data requests via email – in addition to 2-3 reminders in some cases – to certain designated data stewards/contacts between July and December with a target submission date of spring the following year.
  - Most entities receive a related data dictionary, timeline expectations, and links on the transparency website to previous years' data.
  - Some entities may receive personal calls in addition to a formal email.

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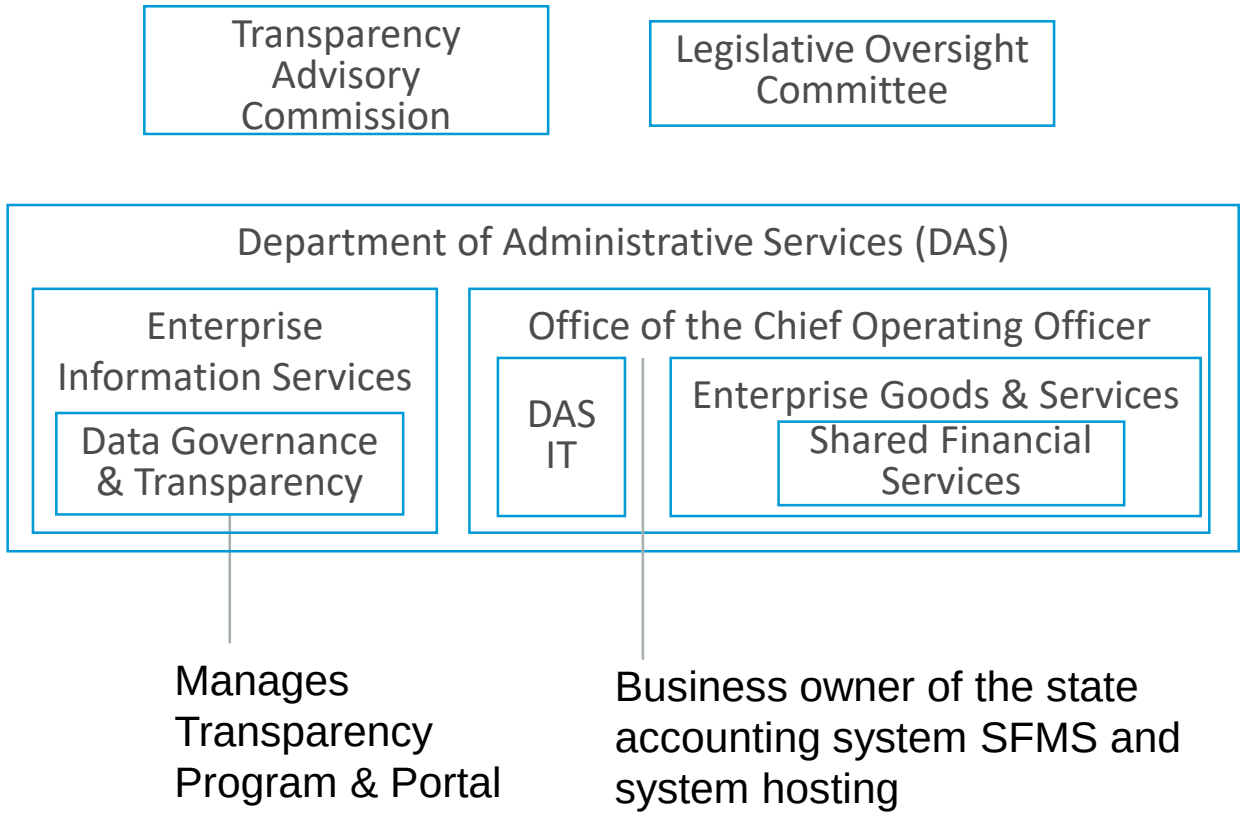
Oregon Transparency Current State (continued)

Oregon Transparency

Staffing & Budget



Staffing	• CDO supports on part-time basis • 1 staff full-time dedicated (significant time spent tracking potential legislative changes that may impact Transparency Program, continuously monitoring and managing the process of requesting data, reviewing/QA of various types of data from various stakeholder organizations, manipulating/transforming data manually, uploading data to Socrata Data Portal)
Cost	• Leverages the state's existing contract with NICUSA for its transparency website and hosting of data.
Funding Source(s)	• Socrata portal is covered under NICUSA contract

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OR Transparency Program has Envisioned a Future that "Opens State Government to Everyone"

Oregon Transparency

Achieving two goals will move the needle on opening government

	Current State:	Future State:
	Resident participation is static, non-interactive, and non-intuitive	Resident participation is dynamic, interactive, and changes based upon constituent need/user demand
Goal 1: Enhance Resident Participation in Government	• Focus on specific campaigns or single messages • Lack of notification/subscription options to receive information proactively from government	• Datasets and tools posted on the transparency website allow for subscription or notification • Data publication is automated wherever possible to allow for more timely publication
Goal 2: Enhance Visibility of Government in Action for Residents	• Information is provided on an annual basis • Information is provided in either raw form for download, through heavy use of text, or through forms like PDFs and downloadable reports (non-mobile friendly) • Information is centered on specific datasets as requested in the Transparency Statute	• Information is presented in an interactive format • Information is provided through a variety of means (visualizations, raw downloadable datasets, text) • Website is structured to meet WCAG accessibility standards wherever possible

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Getting to the Future Vision will require some adjustments given existing pain-points

Oregon Transparency

- It's unsustainable to continue with the current approach.
- While Oregon continues to receive good marks for transparency, the dependency on manual intervention is not sustainable.
- Existing Data Governance and Transparency Office staff are spread thin, and struggle with keeping up versus dedicating the time required to build and improve the program.
- Oregon's Transparency Program is heavily legislated and managed via prescriptive statutes.
- Existing statutes and legislation include outdated requirements (e.g., operating on a "zero cost basis").

This benchmark was undertaken to help provide insight into the ways Transparency is done in other states, to see what opportunities Oregon should focus on to help enable attainment of the future vision.

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Summary Research Findings by Peer State

Summary Research Findings: Arizona

History

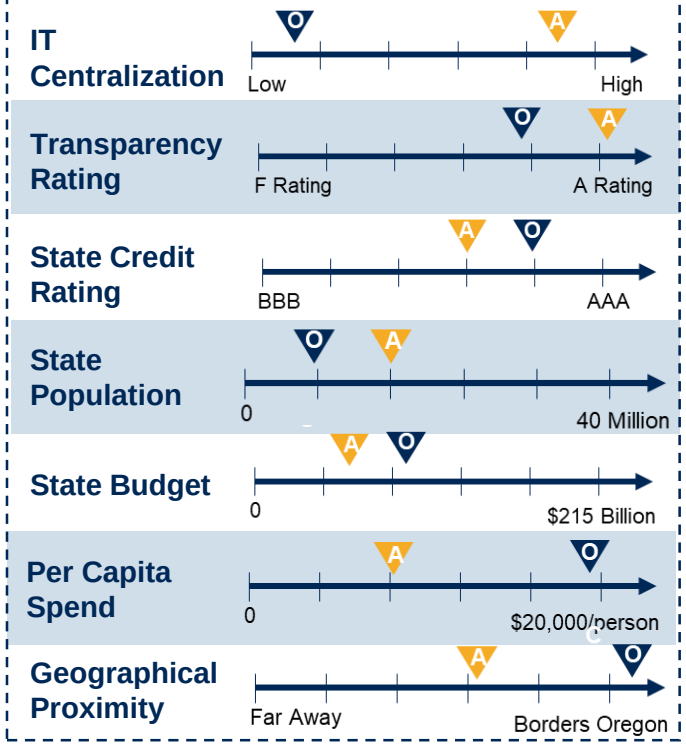
Notional Timeline

2010
- ADOA officially takes on transparency and launches AZ OpenBooks in December 2010

2013
- Revised Statutes (A.R.S.) Section 41-725 mandating fiscal data reporting takes effect Jan. 1 (AZ OpenBooks created in alignment)

2019
- Arizona exploring potential upgrade options to expand visualization and narrative, and enhance usability

Peer Stats



Current Scope of Fiscal Transparency

ARIZONA FINANCIAL TRANSPARENCY PORTAL

- Consumers: Government Employees currently
- Scope: General Fund Revenues, Expenditures, and Ending Balance data (AFIS financial info from FY2009 – current)
- Data is provided by:
  - All state agencies
  - AZ Commerce Authority
  - 16 cities and towns
  - 7 counties
  - 1 higher education entity

Other websites & portals

- Local government entities may host their own financial transparency data – 8 Cities, 2 Community Colleges, and 12 Schools currently do so

Related Open Data & GIS Initiatives

AZGEO Open Data

- Provided by the Arizona Geographic Information Council
- Geospatial specialists reside within individual state agencies

Summary Research Findings: Arizona (continued)

ARIZONA FINANCIAL TRANSPARENCY PORTAL

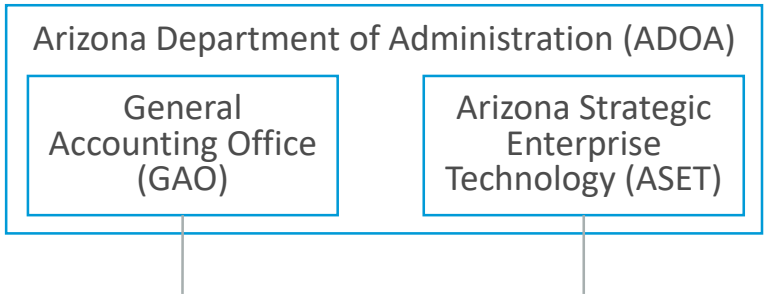
Technology & Automation

- OpenGov solution OpenBooks is updated monthly with prior month state-level financial information
- Mix of manual and automated processing (AFIS, State accounting system enables some automation)
- Agencies are responsible for entering data into AFIS, frequency of upload varies

Operational Approach

- Data extract file automatically generated from AFIS after monthly closing of books, then transferred to server folder via Secure FTP
- Reporting team pulls the file from the secure server folder, saves locally, and uploads to OpenGov site (also maintain links to statewide procurement portal)
- Designated local government users upload data to OpenGov site

Staffing & Budget



Responsible for AFIS system and its data feed into AZ OpenBooks and management of OpenBooks

No real involvement in Transparency. Responsible for larger initiatives related to data management and data classification

Staffing	• No staff are dedicated to Transparency • Core team reports to Executive Sponsorship • AFIS Statewide Accounting System Administrator: 1 FTE • Reporting Team: 2-3 staff (manage the data warehouse for Statewide reporting. ~25% of time on transparency, including manual data uploads to OpenBooks, monitoring shared email, and contacting agencies as needed for AFIS data-related questions)
Cost	• $148,000 annual OpenBooks vendor fee
Funding Source(s)	• $120,000 funding appropriated to the GAO for OpenBooks • Collect $28k from the 27 local government entities who are participating on AZ OpenBooks

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Summary Research Findings: California

History

Notional Timeline

2005
- FI$Cal begins as business transformation project

2007
- Formalized via MOU signed by State Controller, Treasurer, and Dept. of Finance and General Services

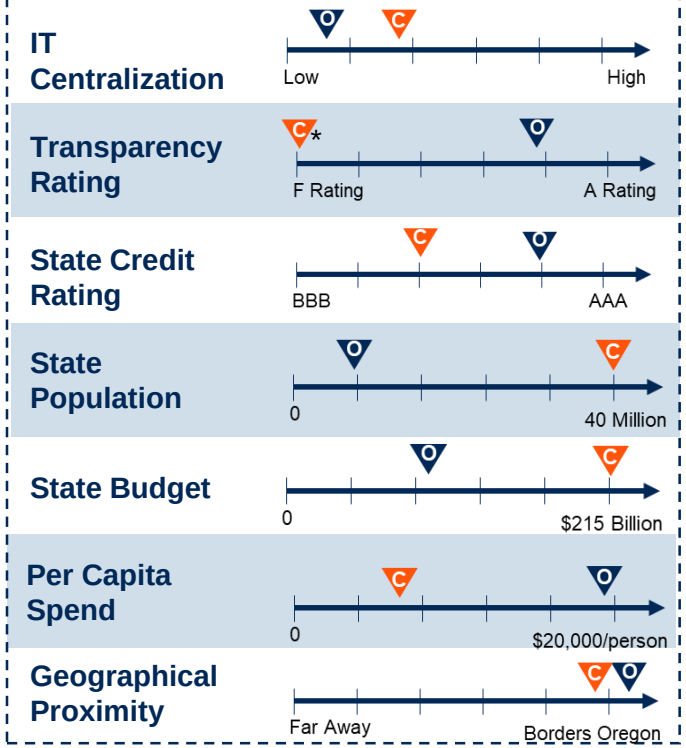
2012
- FI$Cal system project formally begins

2016
- FI$Cal formalized as new department to implement, maintain, and operate FI$Cal system

2019
- Current FI$Cal departments live on Open FI$Cal

2020
- Planned completion of FI$Cal system implementation by June

Peer Stats



Current Scope of Fiscal Transparency

- Consumers: Legislature, State Government Employees
- Scope: Non-confidential spending data from FI$Cal (every expenditure journal line from the FI$Cal modified accrual general ledger), vendor information from the FI$Cal accounts payable module
- Data is provided by: 149 state government agencies using FI$Cal (currently includes 65% of state expenditures and expected to expand)

Related Open Data & GIS Initiatives

- OpenGov
- Geospatial data portal

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Summary Research Findings: California (continued)

Open FI$Cal

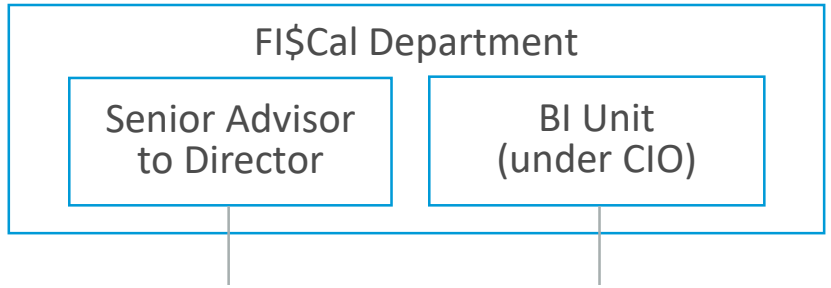
Technology & Automation

- OpenGov updated monthly (with data lag of 60 days)
- Mix of manual and automated processing (FI$Cal, Oracle PeopleSoft ERP/ Hyperion enables automation)
- Agencies are responsible for entering data into FI$Cal. Power BI used to enable agencies to review and QA their data before it goes on the site

Operational Approach

- BI Unit staff manually extract data from FI$Cal system and upload onto temporary Power BI dashboard for review.
- There is a data lag of at least 60 days to allow state agencies to review all information before publication.
- Agencies may go back and request adjustments for recent months' expenditures at any time.

Staffing & Budget



Serves as system Product Owner by interfacing with users and stakeholders, and translating requirements for back-end work

Responsible for all technical work implementing, operating, and maintaining system – including working with OpenGov vendor on system build and monthly extracts

Staffing	• No staff are dedicated to Transparency • Business Intelligence (BI) Unit : 1 Manager, 4-5 staff (sits under the CIO and works with OpenGov to build basic system and do monthly extracts from FI$Cal) • Senior Advisor to Director (Product Owner); ½ FTE support as needed (interfaces with end users and translates requirements)
Cost	• 3 year 6-figure contract for OpenGov portal (pricing based on data complexity and size of state)
Funding Source(s)	• Central Service Agency • Non-General Funds recovered from special and nongovernmental cost funds via Central Service Cost Recovery Fund

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Summary Research Findings: Indiana

History

Notional Timeline

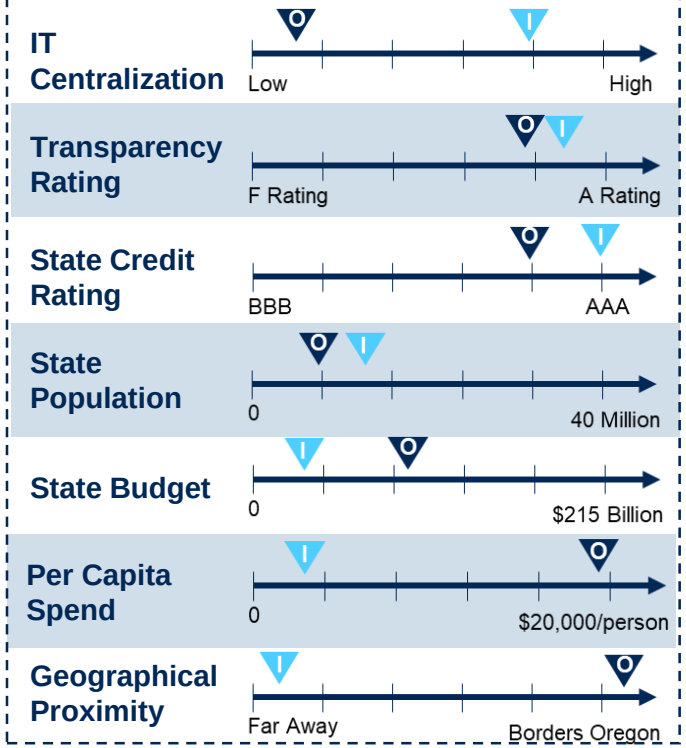
2010
- State Auditor & OMB create Indiana Transparency Portal (ITP)
- Gateway launched (out of a collaborative State/University initiative to open government data to citizens)

2016
- Collaborative development of new statute to codify open data sharing

2017
- Chief Data Officer (CDO) & MPH Agency established

2018
- ITP site overhauled

Peer Stats



Current Scope of Fiscal Transparency

- Consumers: Executive Branch State Agencies
- Scope: State government fiscal transparency (expenditures, reserves, liabilities, assets, contracts, employees, vendors)
- Data is provided by the following entities: All State Agencies

(Separate portal supported by the State and Indiana University)

- Scope: budgets, annual financial reports, employee compensation reports, debt issuances, local development agreements, TIF district summaries, and school district collective bargaining reports, etc.
- Data provided by: hundreds of local units of government, schools, state agencies (responsible for local gov. oversight), casino operators

Related Open Data & GIS Initiatives

Indiana Data Hub
- State open data portal

IndianaMAP
- State GIS/map data portal

Summary Research Findings: Indiana (continued)

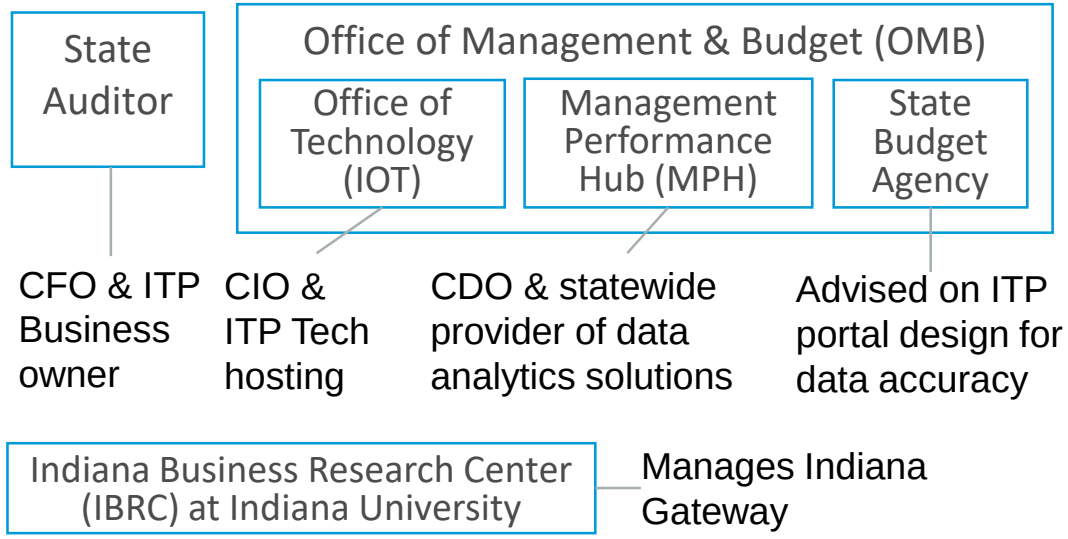
Technology & Automation

- State ERP tools (PeopleSoft 9.2 Finance, and HR) enables fully automated daily updates
- New ITP portal uses data pipelines developed in SQL, and portal with Tableau visualizations – one of several custom analytics solutions created by MPH

Operational Approach

- ITP data collection, prep, and publishing is fully automated
- State agencies use Indiana's statewide ERP systems which feed data to the transparency site
- Updates are automatically pulled into the portal daily
- Participating local government units upload data and transmit files directly onto IN Gateway

Staffing & Budget



Staffing	• No staff are dedicated to Transparency • ITP development was a collaboration between MPH, State Auditor, and Office of Technology. Primarily supported by MPH (break/fix)
Cost	• ITP overhaul took an investment of $600k (majority covering Auditor labor for 6 month project) • Ongoing cost is minimal, no staff are dedicated (MPH staff time for break/fix)
Funding Source(s)	• IOT covers the limited ongoing cost for portal hosting • Limited MPH staff time is covered under general fund appropriations ($8.25M in 2020 for larger mission)

Summary Research Findings: Utah

History

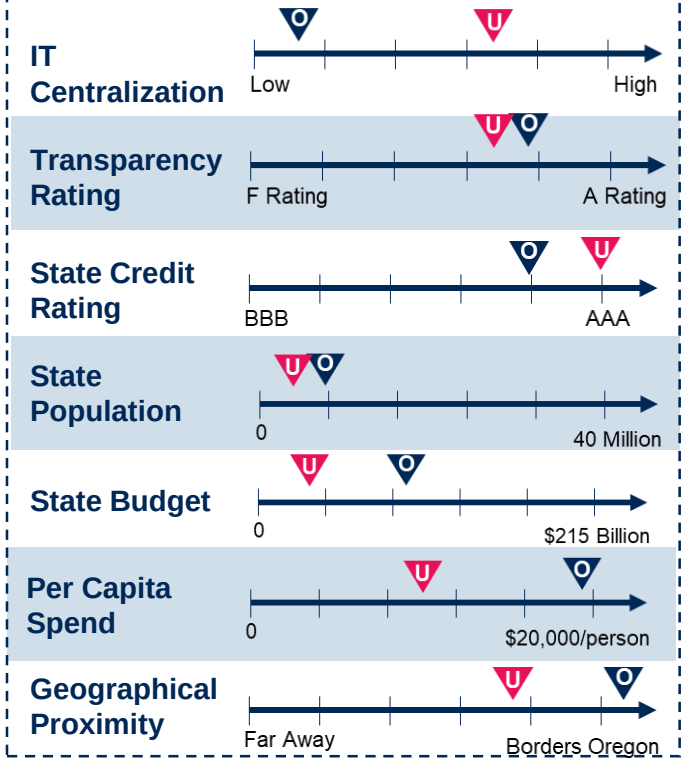
Notional Timeline

2008
- Senate Bill 38 required the creation of a website to ensure state and local government financial information is available to the public

2009
- Transparent Utah went live on May 15, 2009

2019
- Management of transparency site legislatively passed from Division of Finance to Office of State Auditor and Utah Gov't Transparency Advisory Board

Peer Stats



Current Scope of Fiscal Transparency

- Consumers: Legislature, Legislative Auditors, Policymakers, State Auditor, External Research Orgs (e.g., Pew Research Center, Casey Foundation)
- Scope: Employee pay, vendor payments, detailed checkbook (expenditures & revenue)
- Data is provided from: Most of Utah's 1,000 public entities (state and local governments, school districts, and special service districts)

State of Utah Spending

- Scope: Provides guided, interactive visualizations (charts, graphs, and tables) of government spending for state agencies in Utah
- Data is provided by the following entities: all Utah state agencies

Related Open Data & GIS Initiatives

- Primary Open Data site (includes 5-micro portals)
- Includes all geospatial mapping data (federated, not duplicated)

Summary Research Findings: Utah (continued)

Technology & Automation

- Automated with some manual Intervention, updated weekly to monthly (varies), mandated at least quarterly.
- OpenGov is used for State of Utah Spending site.
- FINET (centralized accounting) feeds the Spending Site.
- Transparent Utah is managed by the Auditor. Socrata portal (NICUSA contract).

Operational Approach

- Transparency Site – Data stewards from agencies submit data to portal. Utah Interactive uploads data on behalf of participating local gov't entities. All data goes through QA.
- Spending Site – State Data Coordinator goes into the data warehouse once a month and extracts data from FINET for executive agencies. Underlying data updated quarterly, and data generally reflects all payments made up through the previous quarter.

Staffing & Budget

Provides guidance on transparency and access to public financial information

Utah Government Transparency Advisory Board

Office of the State Auditor

Utah Interactive (Vendor)

Dept. of Technology (DTS)

Administers Transparent Utah. Manages data submissions for executive branch agencies

Manages submissions from local gov't entities

Manages Spending site (as well as Open Data)

Staffing	• No staff solely dedicated to transparency. • State Data Coordinator (1 FTE) – primary point of contact for financial data transparency, and maintains Open Data Portal and data catalog • Office of the State Auditor • Utah Transparency Advisory Board
Cost	• 25% of SB 70 funding covers Socrata license and 75% covers salary/benefits for State Data Coordinator • Utah Interactive (NICUSA) is a separate contract
Funding Source(s)	• DTS is 100% fee-for-service (hosting websites, networks, databases) • State CIO and Data Coordinator funded through SB 70

Summary Research Findings: Washington

History

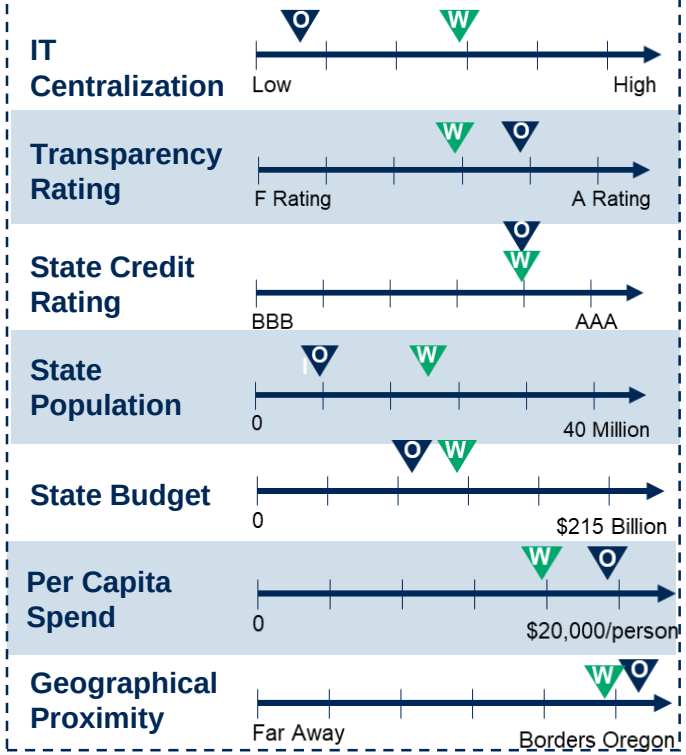
Notional Timeline

1977
- LEAP bipartisan legislative committee established thru RCW 44.48

2008
- RCW 44.48.150 requires financial data be made transparent & requires OFM & LEAP to create a transparency website

2017
- SB 5969 (enacted requiring LEAP to incorporate collective bargaining agreement information

Peer Stats



Current Scope of Fiscal Transparency

- Consumers: Constituents (but LEAP focuses on the legislature)
- Scope: Statewide expenditures, budgets, and revenue; agency workloads, caseloads, performance measures, audits, fee inventories
- Data is provided from the following entities:
  - All State Agencies + Boards, Commissions
  - Governor's Office, Legislature
  - Higher Education, K-12 School Districts via OSPI

Related Open Data & GIS Initiatives

- State open data portal
- State GIS/map data portal
- Government performance management system

Summary Research Findings: Washington (continued)

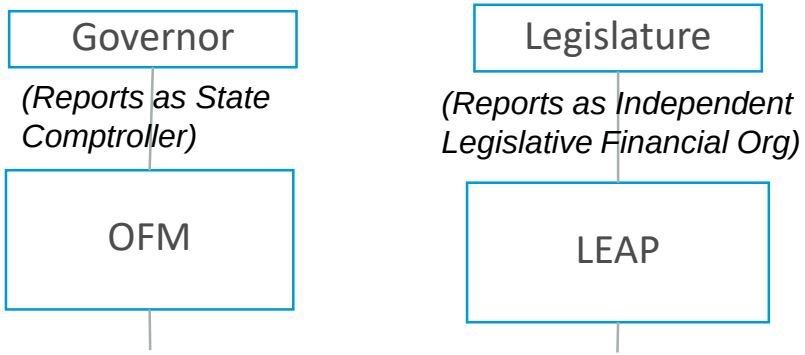
Technology & Automation

- Custom – ASPX, HTML, Power BI (utilized recently), and Microsoft SQL Reporting
- Mix of automation w/ some manual intervention. Integration with LEAP financial systems (fiscal reporting, budgeting)
- Update frequency varies based on data type and source (e.g., revenues and expenditures monthly)

Operational Approach

- Centralized financial system extracts statewide spending and revenue data.
- OSPI provides school employment salaries and other district data directly to LEAP
- MS SQL Reporting services populates data and creates reports from select legacy databases
- LEAP contacts agencies and other entities as needed

Staffing & Budget



Comptroller. Coordinates closely with LEAP on financial system integration

Manages legislative financial systems and the transparency site

Staffing	• No staff solely dedicated to transparency. • 10 Staff in LEAP: 5 IT Developers, 2-3 FTEs who support transparency related work more specifically • LEAP staff primarily support the Legislature, such as developing budgets, tracking revenue, consulting, analysis, and reporting • OFM is considered a peer/key collaborator with LEAP
Cost	• Leg-Tech support is charged back
Funding Source(s)	• $4.6M primarily for staff salary and benefits (not much is used for transparency)

How does Oregon's program compare to similar programs in other states?

	Scope & Statutory Authority	Budget & Staffing	Operational Approach
Similarities	▪ Oregon is similar to other states in… – Having transparency enshrined in statute	▪ Oregon is similar to other states in… – Having a limited budget	▪ Oregon is similar to other states in… – Using a typical vendor solution (Socrata)
Differences	▪ Oregon is unique in… – Specificity of its statutory mandate, which includes an extensive set of required data elements and entities (some states cover local entities but are often managed separately, and mandates for specific types of data are typically limited)	▪ Oregon is unique in… – Having staff dedicated to a separate Transparency Program – Lack of finance business sponsorship & participation	▪ Oregon is unique in… – Level of manual effort for data collection – Low frequency of adding state agencies' financial data – Level of custom outreach – Lack of graphs & continued focus on tabular data

What are the lessons learned from peer organization efforts to build transparency programs in their states?

Implementing automation was critical to success – refreshes are now daily so agencies can see more real-time information about their own finances vs. running queries.

To get ideas on layout, graphics, & usability – look at other state sites for inspiration. If you are going with a vendor solution, look at other states using the same platform to see what's possible.

The public doesn't understand critical terminology like "Fund" and "Sweep Account". For constituents to get value, you have to curate the experience and provide educational tools.

Accuracy and confidence in data is a critical enabler – it requires constant outreach and coordination with the Office of Finance (particularly to alleviate anomalies / errors in data).

Hire a data engineer (they need to be highly-skilled and innovative) and migrate to the cloud where possible, it provides an opportunity to clean data, merge/link data, etc.

Themes & Market Direction

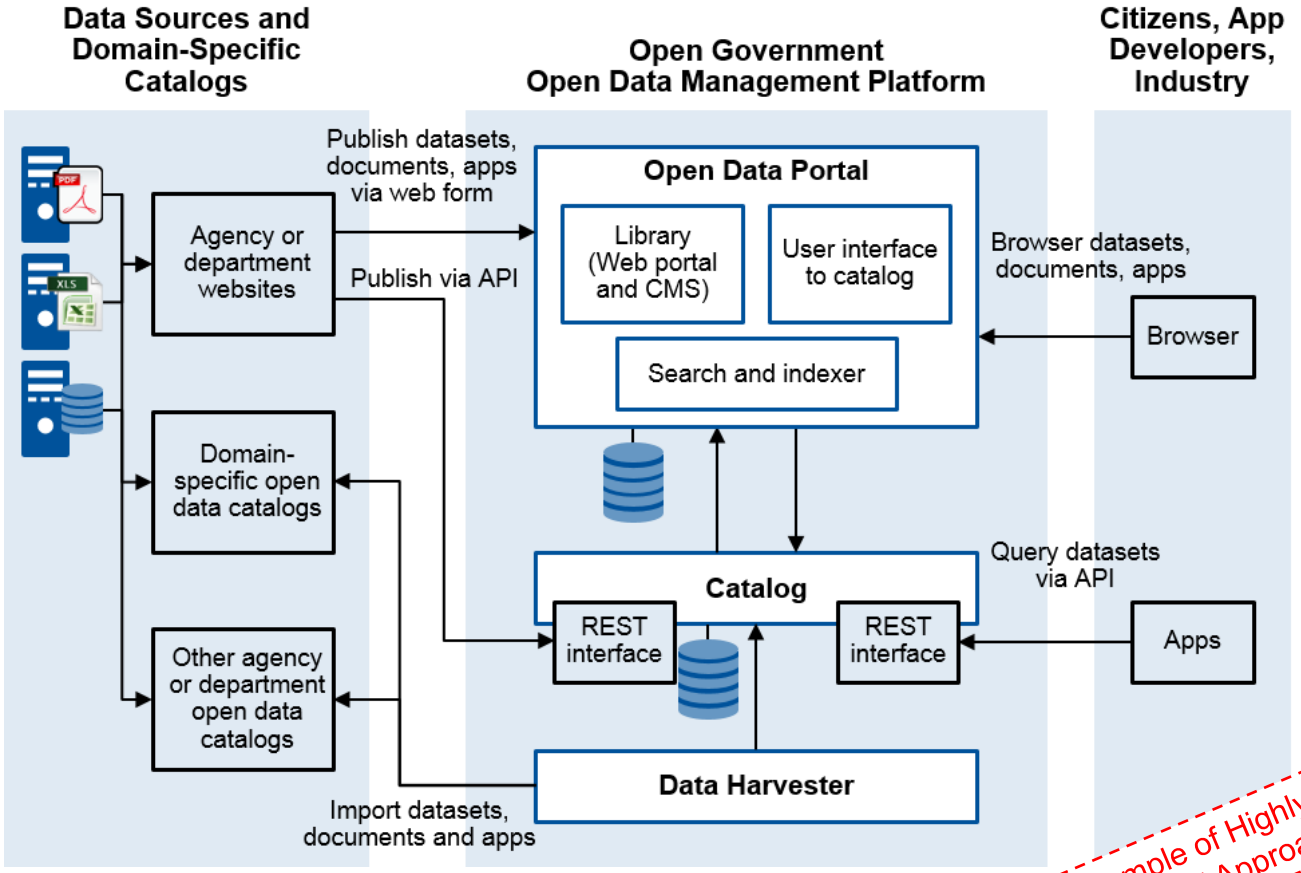
Overview of Themes & Market Direction

What are the key trends and best practices in public sector transparency programs?

1	2	3	4
			
Automate Everything	**Narrate & Contextualize Data**	**Don't Legislate Transparency, Envision It**	**Modest Investments in Modernization Can Pay Off**

1 Automate Everything

- Labor intensive manual processing is a suboptimal way to solve an integration challenge.
- Often just a few technical tools and the right skillsets – data engineering – can solve a lot.
- Transparency can be automated to the point that the focus can shift to the harder data problems.
- Some degree of automation is achievable no matter what solutions are used (financial, transparency portal, etc.) – i.e., it's solution agnostic.

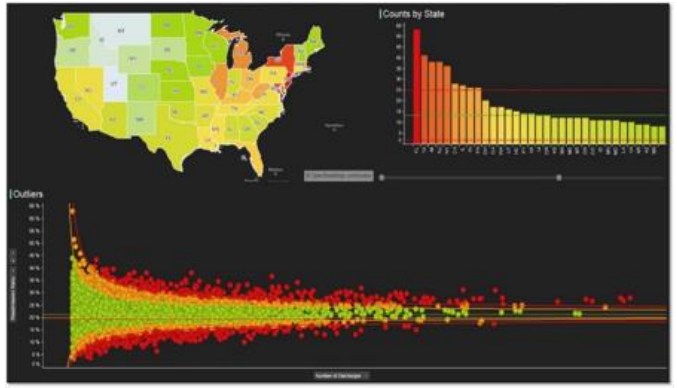


Source: Market Guide for Government Open Data Management Platforms

2 Narrate and Contextualize Data

- We know it is not enough to just provide data. Gartner identified long ago that the idea, "If you build it, they will come," has not worked for government web portals.
- GovTech also notes a tendency for sites to become “data dumps” where “the average legislator or citizen finds it nearly impossible to find specific, useful information.”
- A largely unrealized benefit of government open data is its ability to make the information understandable and useful to the casual website visitor.
- Making sense of data through the art of interpretive narrative, advances public policy and adds a level of accountability to the transparency and engagement that programs are intended to promote.

Data Visualization Functionality: Two Critical Capabilities



Analytic Dashboards

- Highly interactive dashboards and content, with some visual exploration and embedded advanced and geospatial analytics, to be consumed by managers.
- Best for monitoring a defined set of measures.

Interactive Visual Exploration

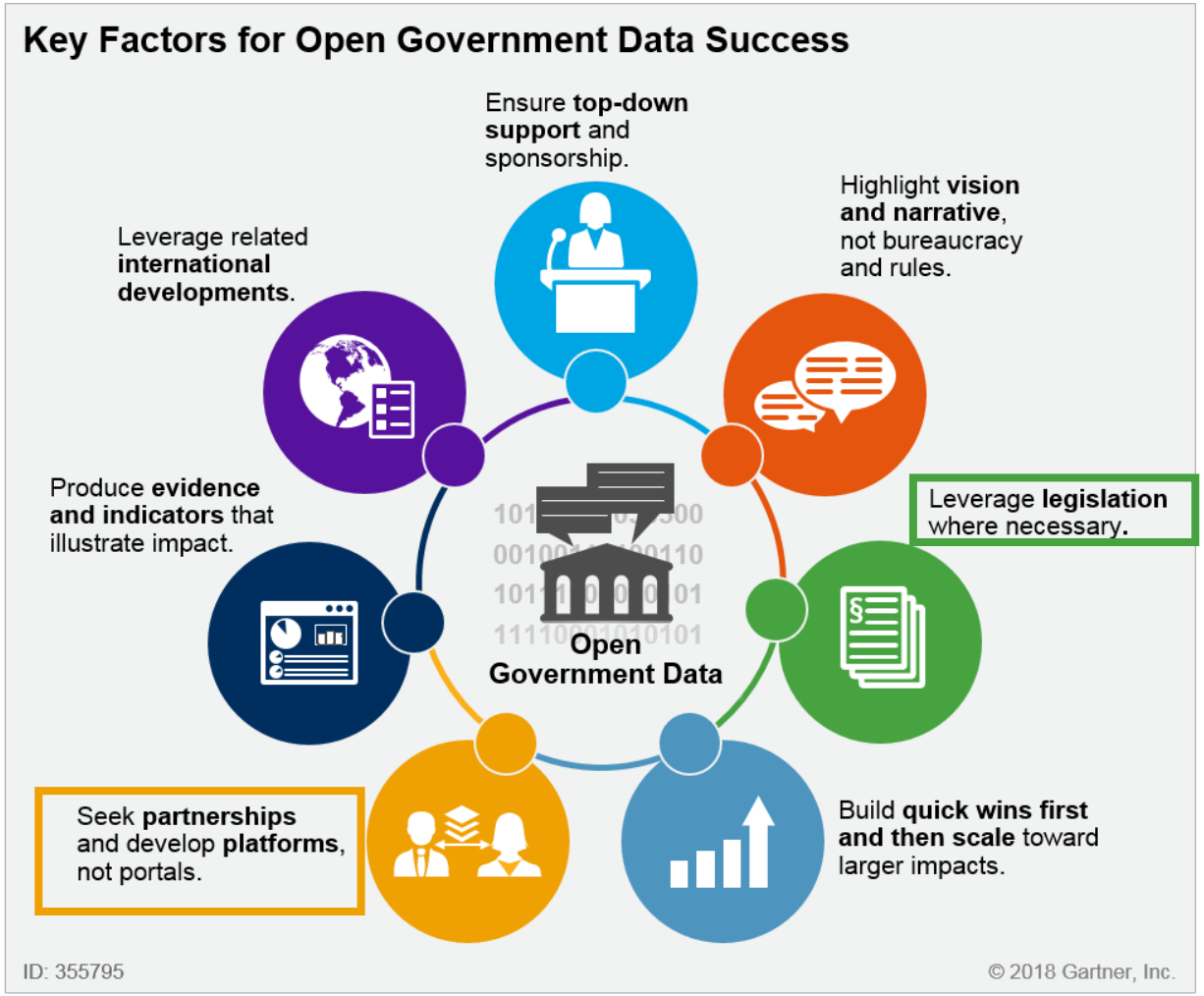
- Data exploration via interacting with chart images, beyond those of pie, bar and line charts — including heat and tree maps, scatter plots and other special-purpose visuals.
- Best for discovery and exploration of datasets.

Source: Adapted from Tableau (left), TIBCO Software (Right)
ID: 383354

Source: How to Get More Value From Data Visualization

3 Don’t Legislate Transparency, Envision It

- Legislating a laundry list of data elements to dump on the site unfortunately misses the mark and creates more challenges than it solves.
- Platforms are an ideal vehicle to overcome the “data dump” challenge – they enable gathering stakeholders and scaling initiatives (e.g., by building reusable components for data sharing, access, analysis and visualization).
- Platforms of communities help governments evolve from being an exclusive provider of information, data and services to becoming part of a dynamic ecosystem.
  - Websites and digital services should go beyond allowing access to and downloading of datasets.
  - Reuse and value creation have to be facilitated through APIs and modern tools for collaborative analysis and visualization.

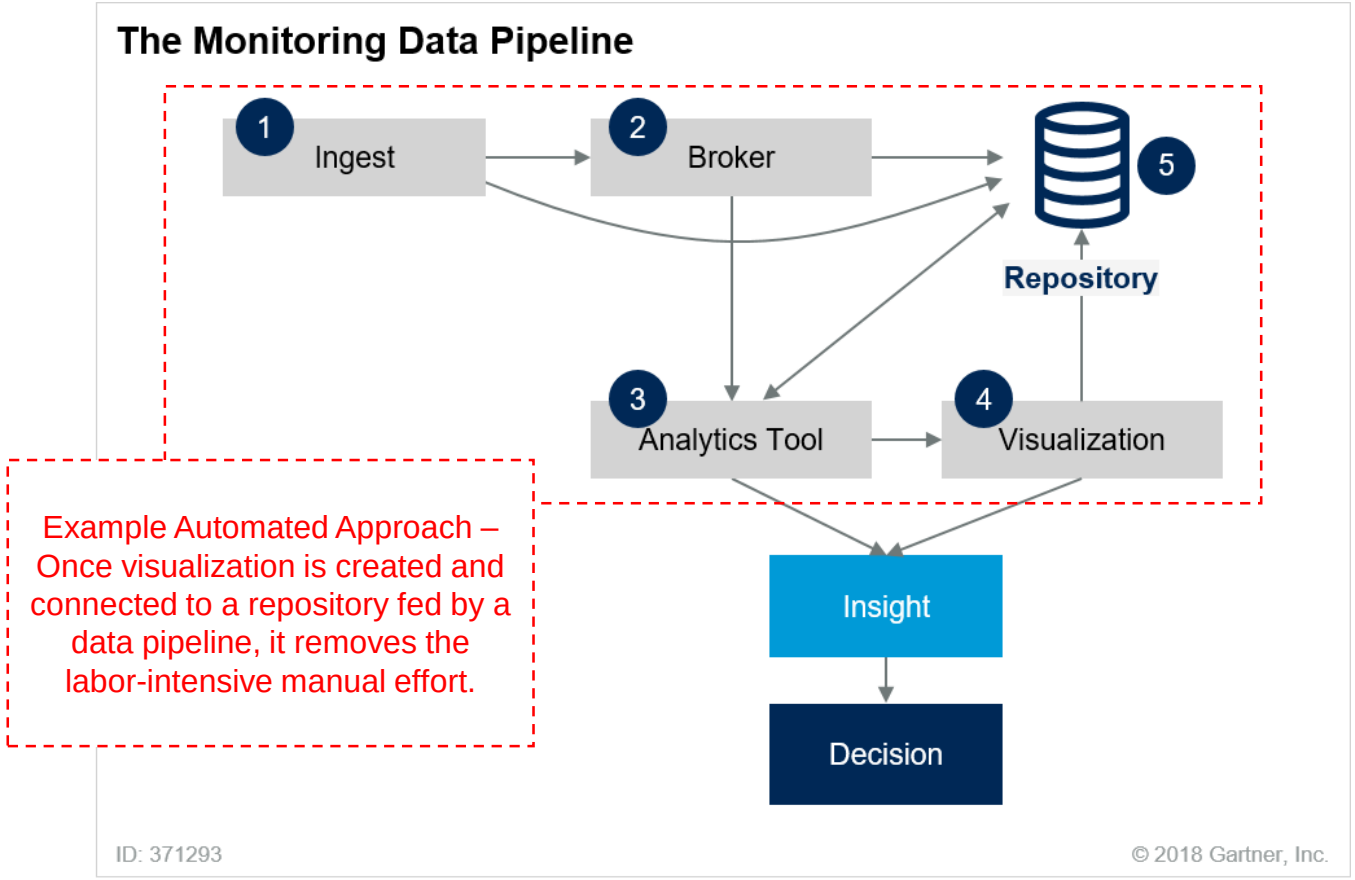


Source: 7 Ways to Maximize Impact from Open Government Data: Lessons from France

4

Modest Investment to Modernize Transparency Program Can Pay Off

- Modernization can start out as an agile project.
- It is initially more important to create quick wins, agree on a roadmap of activities and iterate on prototypes than to devise a grand strategy.
- Once a higher level of maturity is achieved, it makes sense to consolidate and institutionalize accomplishments.
- Design for interoperability and reuse, and strive for greater automation.



Source: Rethink Network Monitoring for the Cloud Era

Future State Recommendations for Oregon Transparency Program

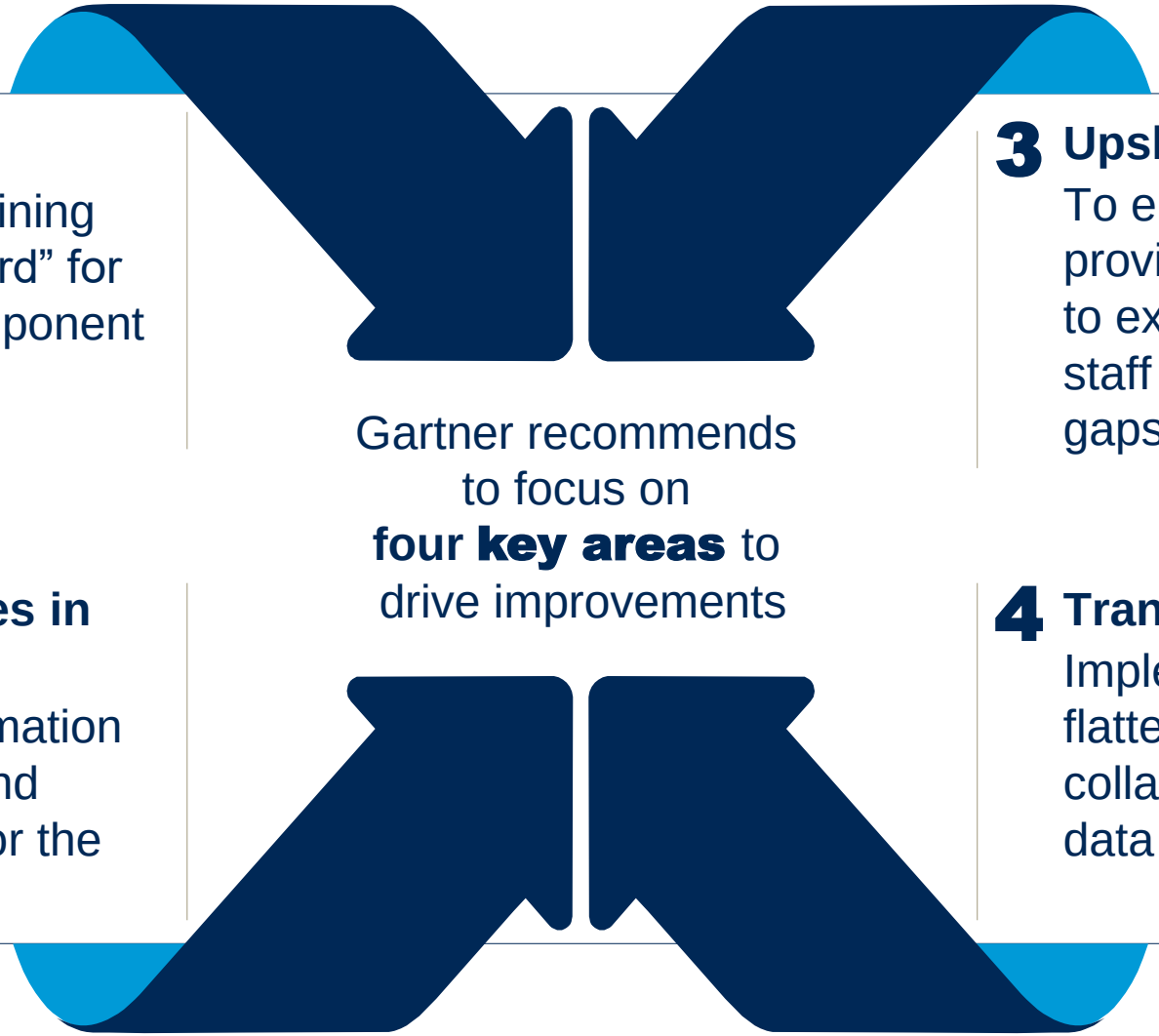
There is no one right way to design a data office organization…

An effective organizational structure today may need to change next year to adapt to business, technological, regulatory or market changes...

You must lead the development of the correct competencies and rebalance work to be consistent with your enterprise's ambitions for generating information value.

Future State Recommendations

Based on market trends, best practices, and peer lessons learned, Gartner believes the following are the highest value opportunities to advance government transparency in Oregon:



Gartner recommends to focus on **four key areas** to drive improvements

1 Think long term.
Craft a future vision defining the "Destination Postcard" for Transparency as a component of a broader open data program.

2 Go after quick victories in the near term.
Negotiate greater automation from the SFMS team and prepare stakeholders for the shift in approach.

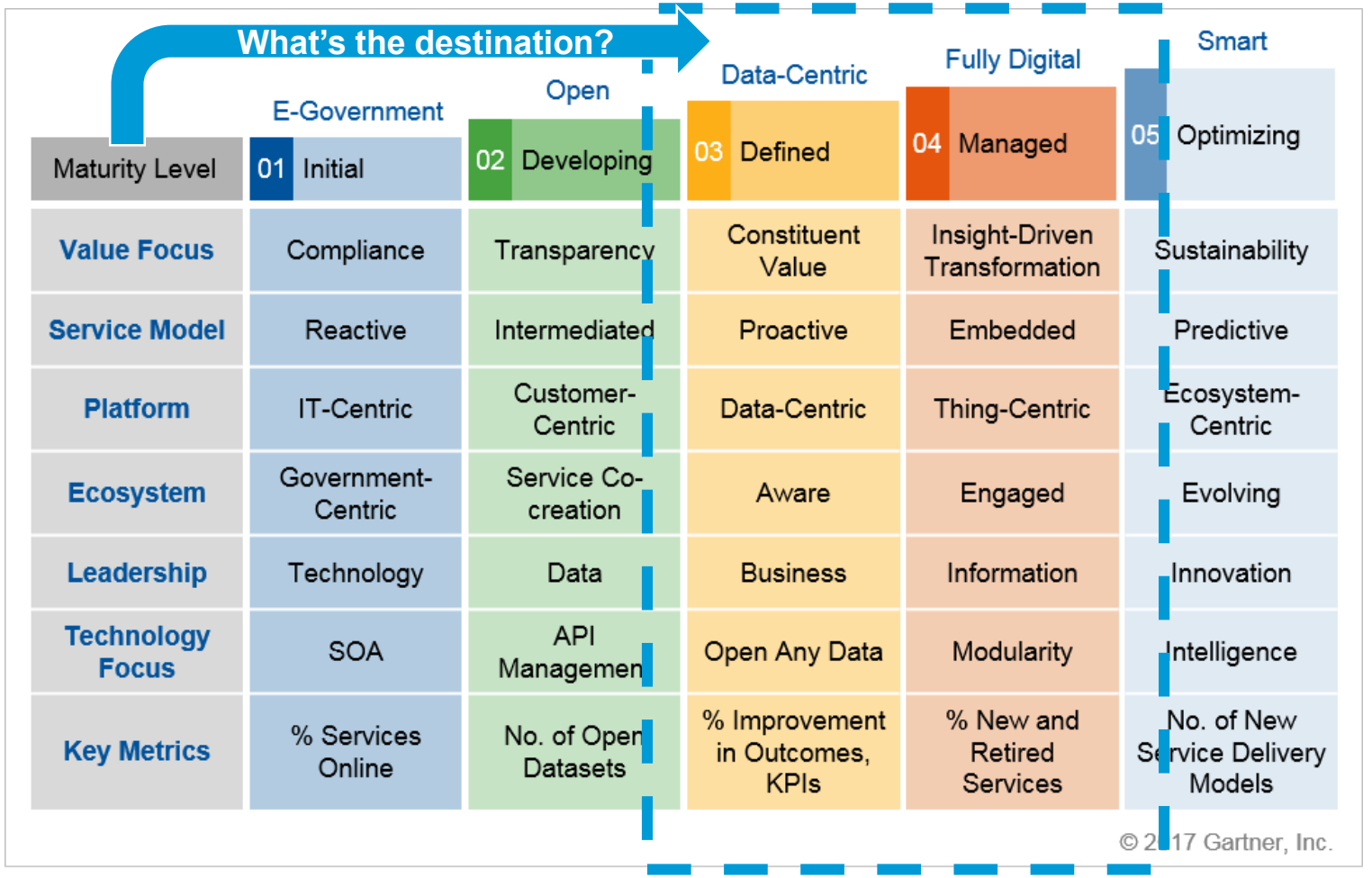
3 Upskill and grow the team.
To enable the future vision, provide training opportunities to existing staff, and recruit staff where needed to fill key gaps (data engineer).

4 Transition incrementally.
Implement a shift toward a flatter organization that collaborates on the most critical data challenges in Oregon.

Updating the Vision – Establishing a "Destination Postcard"

- Financial transparency portals have been an area of great emphasis over the last decade
- But as Transparency Programs have matured, modernized and have become automated, many states have shifted focus to Open Data Programs
- In leading government organizations, Open Data Programs have started to dovetail with broader Digital Government Programs
- Given new laws in Oregon (including 3361), the state is now on the cusp of a shift, with transparency likely to become more of a byproduct rather than a focus
- It is time to revisit the vision for the Transparency Program given that context

Gartner's Digital Government Maturity Model



Oregon's "Destination Postcard" for a More Open Government

- Constituent/user participation is dynamic and interactive
- Constituent need/user demand drives development of new solutions
- Constituents are empowered to learn about, and engage government (subscriptions, descriptions, etc.)

Desired Outcomes
Oregon, USA

- Information is governed
- Information is a community resource
- Information landscape is clear and navigable
- Information is provided through a variety of means

Business Model	 **Innovative Solutions**	Transparency is just the tip of the iceberg falling within a larger umbrella of Open Data, and Digital Government	 **Proactive**	Team seeks out relevant, interesting, and important data challenges to tackle next	 **Constituent/ User Focus**	Team internalizes constituent/ user-centered design practices (accessibility, usability, etc.)
Operating Model	 **Flat Org**	CDO manages a single team of generalists who are working to solve the critical data problems in Oregon	 **Continually Improving**	Team is continually working on solving newer problems, measuring success, and identifying ways to improve	 **Collaborative**	Team breaks down intra-office, intra-departmental, and inter-departmental silos, and engages constituents/users to maximize partnerships
Technology Model	 **Platform-Enabled**	Technology ecosystem is continuously modernized to provide best-in-class and innovative solutions	 **Automated**	Data pipelines are automated wherever possible to allow for more timely publication of information	 **Architected for Reuse**	Team moves past business as usual to implement incremental improvements designed for interoperability and reuse

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Appendices

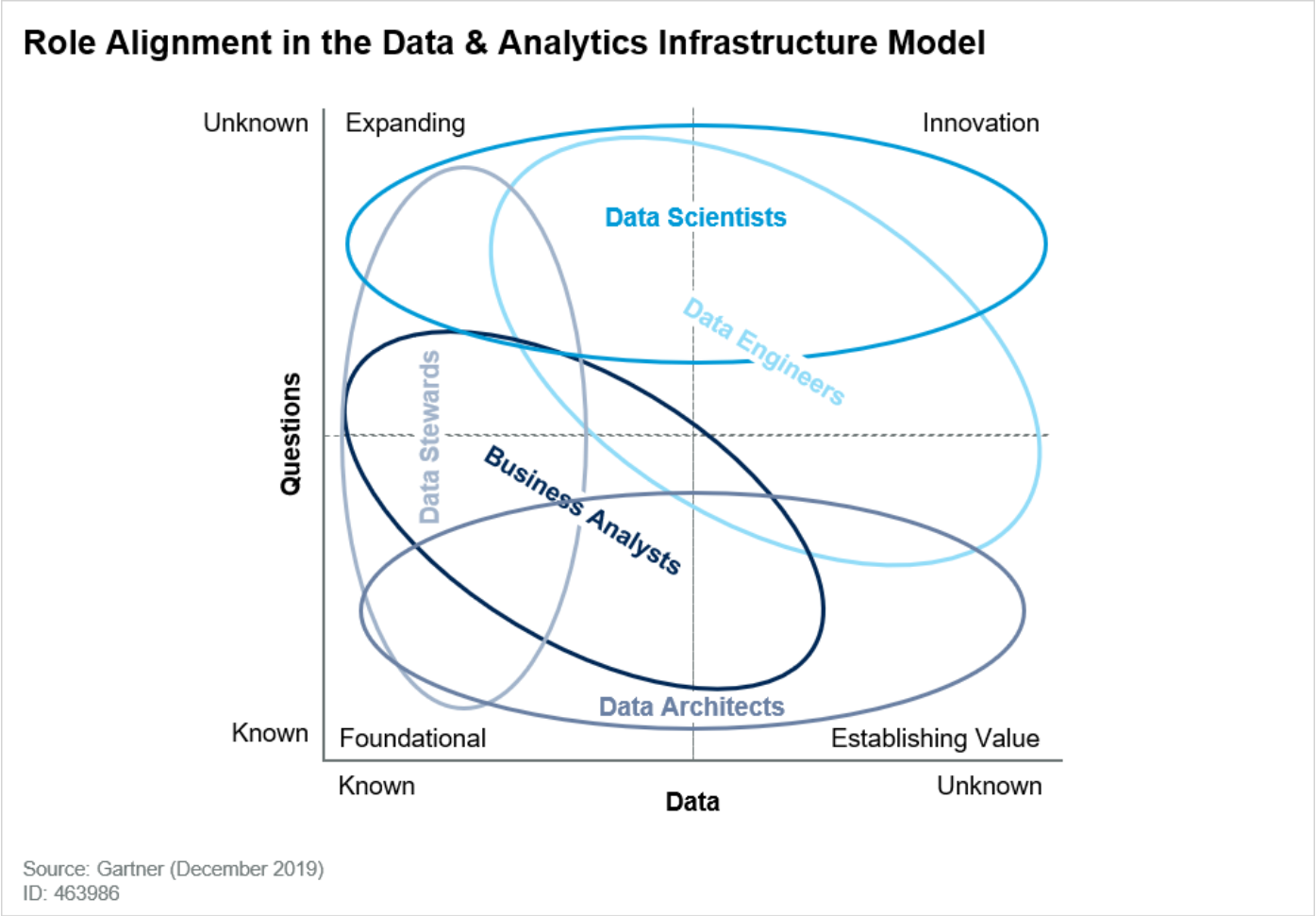
Appendix: Descriptions of Potential Future Roles
Appendix: Peer State Interview Questions
Appendix: Peer State Interview Participants
Appendix: References

Appendix: Descriptions of Potential Future Roles

Relevant Roles for Future Consideration

As the Oregon Transparency Program expands and matures, several new roles should be considered:

- Data Scientist
- Data Engineer
- Data/Information Architect
- Business Relationship Manager
- Business Analyst

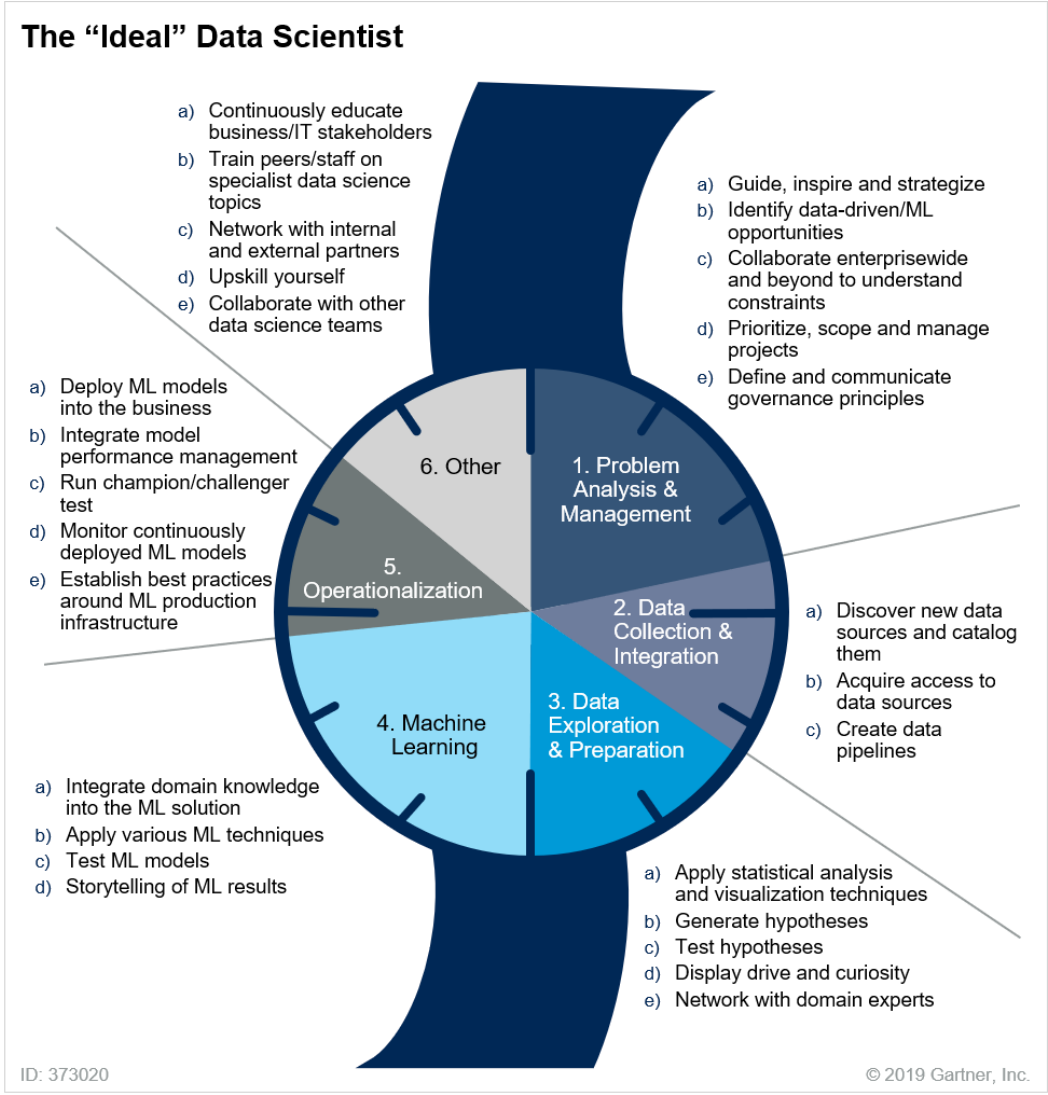


Source: Data Engineering Is Critical to Driving Data and Analytics Success

Role Definition: Data Scientist

Data Scientists are the main characters that drive modern data and analytics projects forward in the enterprise

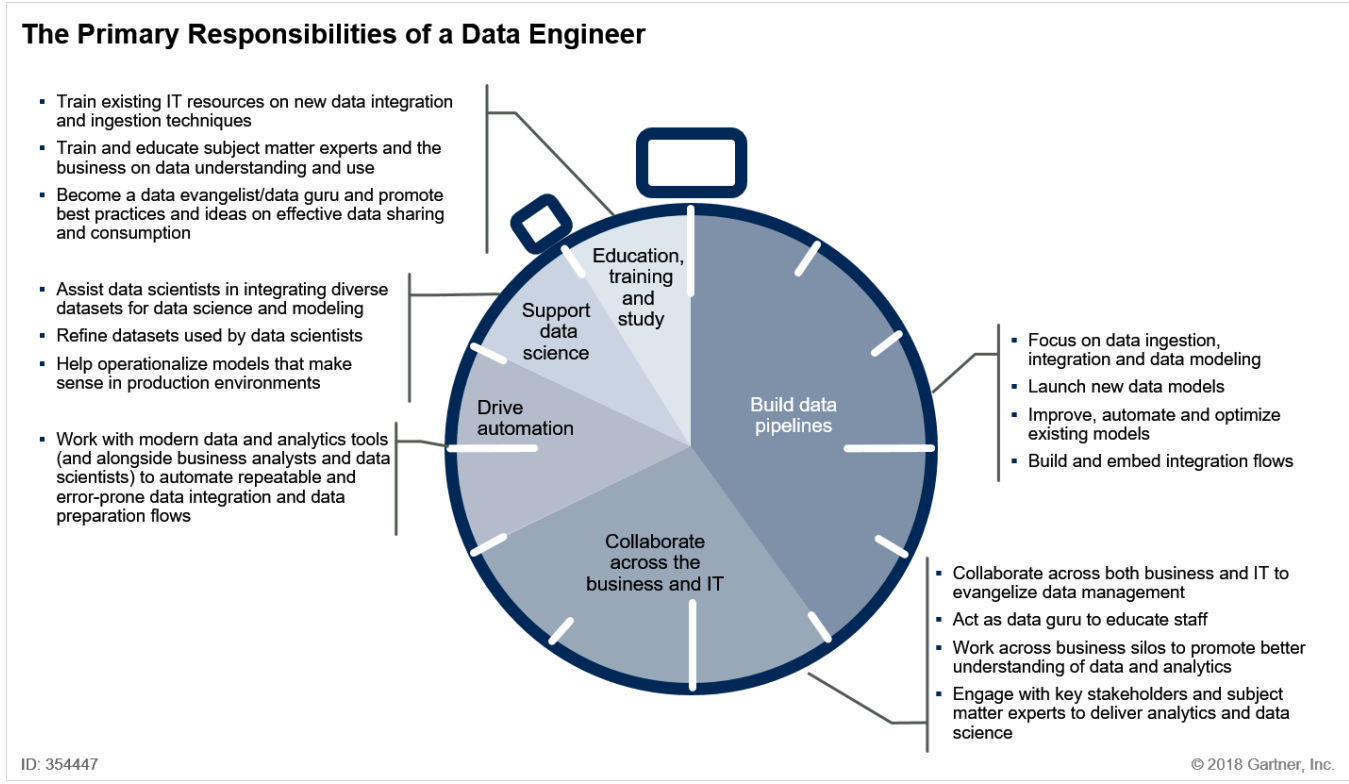
- **The Role of a Data Scientist**
  - Data Scientists are responsible for modeling complex business problems and discovering business insights through the use of statistical, algorithmic, mining, and visualization techniques
  - Small and emerging teams typically seek well-rounded Data Scientists who care about the whole data pipeline, including management and training (see Figure 1)
- **A Data Scientist Does**
  - ✓ Collaborate with cross-functional stakeholders to understand the business usage of data
  - ✓ Architect database and computing environments
  - ✓ Communicate recommendations to enable decision-making
- **A Data Scientist Does Not**
  - × Necessarily perform data warehousing, data engineering, or traditional BI reporting activities
  - × Necessarily have specialized industry knowledge



Role Definition: Data Engineer

The increasing diversity of data, and the need to provide the right data to the right people at the right time, has created demand for the data engineering practice

- **The Role of a Data Engineer**
  - Data engineers play a key role in building and managing data pipelines, and promoting data and analytics use cases to production (in line with business processes)
- **A Data Engineer Does**
  - ✓ Perform data integration, preparation, and management
  - ✓ Lead complex task of curating datasets and data pipelines created by nontechnical users, data scientists, and IT resources and operationalizing data delivery for production
  - ✓ Deploy analytics and data science into existing business processes and applications
  - ✓ Develop, construct, test, and maintain architectures, such as databases and large-scale processing systems
- **A Data Engineer Does Not**
  - × Necessarily develop models for data science and machine learning
  - × Necessarily clean, massage, and organize (big) data

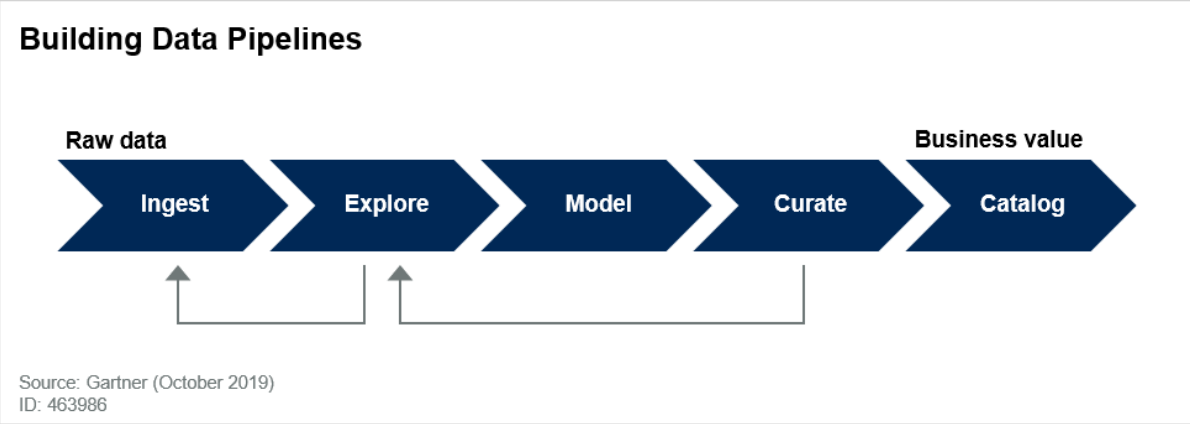


Role Definition: Data Engineer (continued)

The primary responsibility of data engineers is to build data pipelines

It is an iterative and agile process for exploring, combining, cleaning and transforming raw data into curated dataset. It requires a strong focus on data integration, modeling, optimization, quality and governance, and security for reuse.

Ingest — Involves various tasks, including deciding whether to connect or collect data, or to build APIs for data access by analyzing source systems for optimal access. It also involves choosing the appropriate target data store to capture data extracts for downstream consumption. This step can require creating new (and reusing or optimizing existing) ETL processes, employing a variety of data integration and data preparation tools, or writing code — such as Scala, Python and Java. Data engineers may need to work with IT operations to figure out the best possible source connectivity.



Source: Data Engineering Is Critical to Driving Data and Analytics Success

Catalog — Involves creating an inventory of all related data assets, adding descriptions and making them discoverable for business use. Also involves applying data governance rules in collaboration with information stewards, where applicable

Explore — Involves performing initial data exploration steps, such as profiling, understanding data quality, binning, pivoting, summarizing and finding correlations. At this stage, data engineers might need to work with data stewards to understand and address data quality issues, and ensure data is assured. This might involve, for example, separating outliers from errors

Model — Involves architecting, building and delivering new data models. At this stage, data engineers might need to work with data architects to formalize the models in accordance with the set organization governance practices.

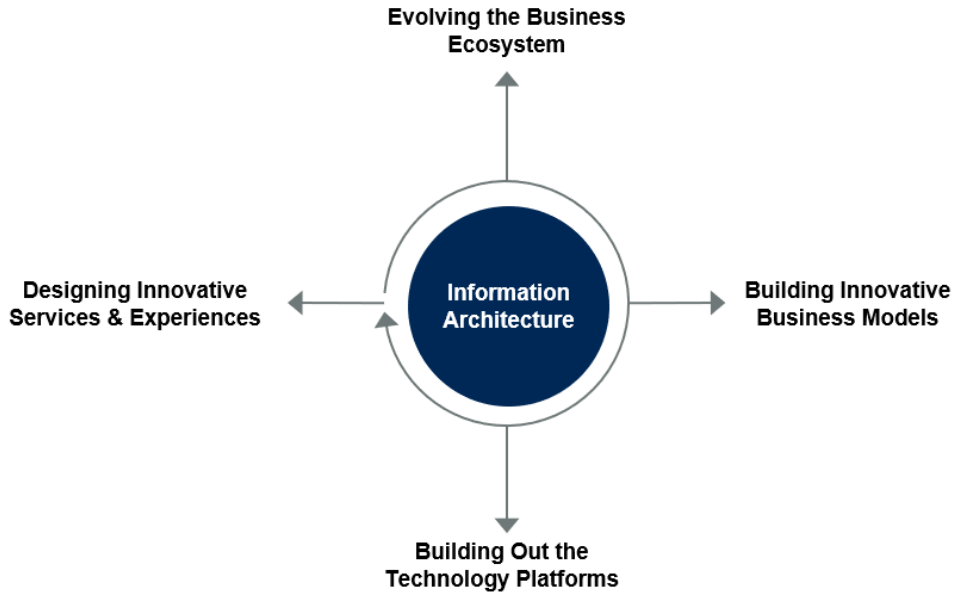
Curate — Involves cleaning, integrating and transforming data in accordance with the defined target model. At this stage, data engineers might need to confirm the desired data quality with data stewards, and the output of the physical models with data architects.

Role Definition: Data/Information Architect

By 2023, 65% of EA programs will refocus on information architecture, making it central to all digitalization initiatives

- **The Role of a Data/Information Architect**
  - A Data/Information Architect provides technical leadership and strategic direction for the technologies, standards, processes and architectures for data across the enterprise
- **A Data/Information Architect Does**
  - ✓ Contribute to the strategy and architecture for managing the enterprise's data
  - ✓ Manage data governance and data quality best practices
  - ✓ Work with business and IT stakeholders to ensure data architecture address business and IT objectives
- **A Data/Information Architect Does Not**
  - × Necessarily focus on the physical implementation of databases
  - × Perform the data analytics or business intelligence for the organization
  - × Focus on user experience or functionality

Information Architecture Shapes the Future of Enterprise Architecture

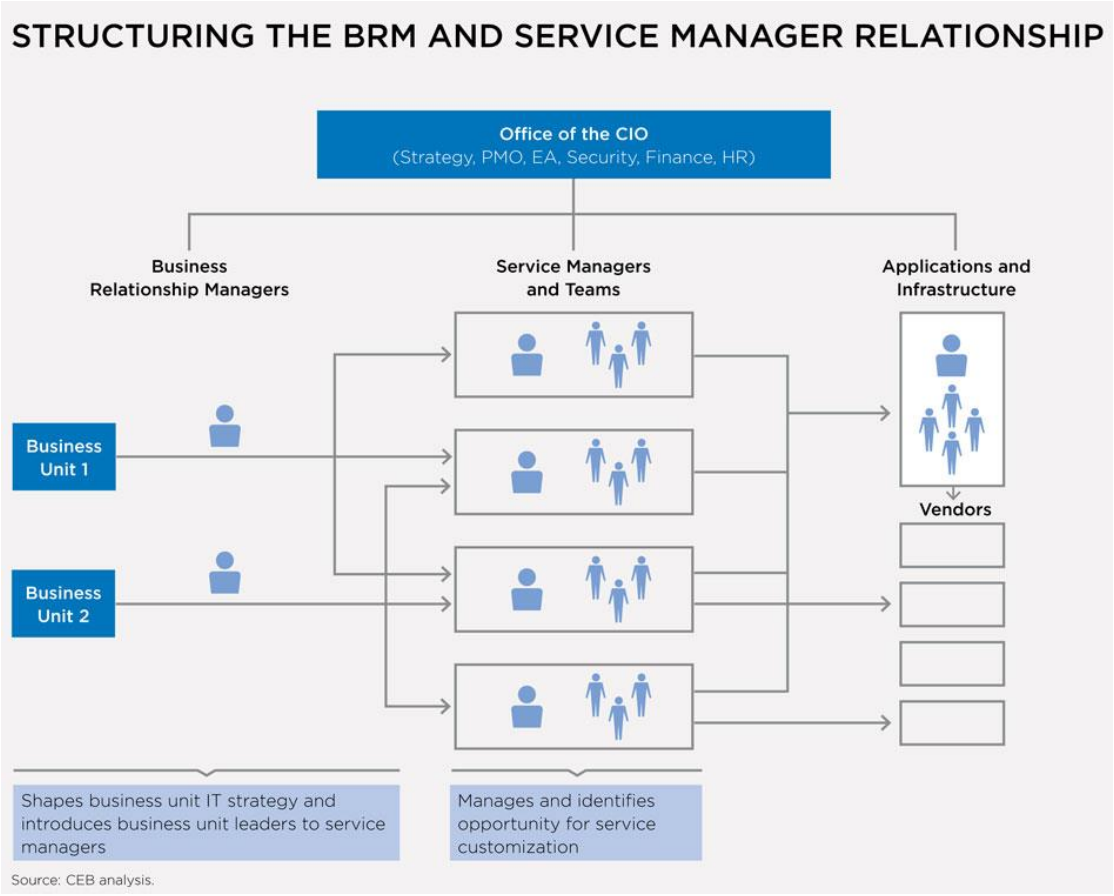


Source: Gartner (December 2019)
ID: 451373

Role Definition: Business Relationship Manager

A Business Relationship Manager's mission is to increase the business value delivered by the IT organization and its perception among clients in the business areas

- **The Role of a Business Relationship Manager**
  - The Business Relationship Manager provides direction and guidance to business partners to enable the best information technology solutions that match strategic business needs
  - Alternative titles include Business Liaison, Business Technology Advisor, or Business Consultant
- **A Business Relationship Manager Does**
  - ✓ Bridge the gap between business partners and technology solution providers
  - ✓ Communicate business needs with appropriate IT solution center to gain alignment between business needs and technical capabilities
  - ✓ Track ROI for business initiatives including cost, benefits, and risk
  - ✓ Define, prioritize, and manage program and project initiatives
- **A Business Relationship Manager Does Not**
  - × Determine the enterprise business strategy
  - × Necessarily recommend technology solutions
  - × Directly engineer technical solutions

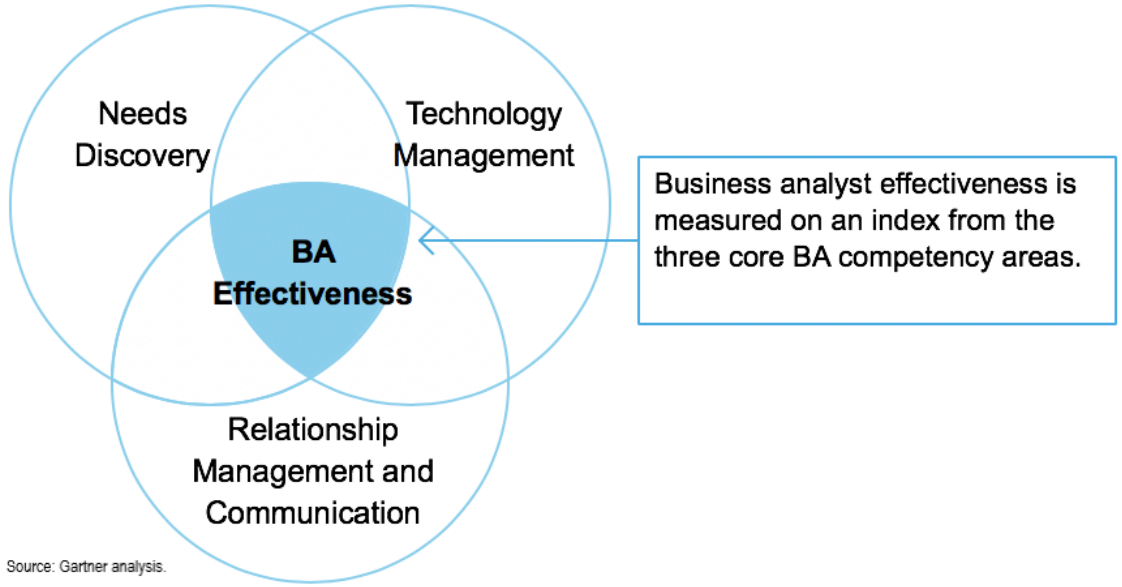


Role Definition: Business Analyst

Business Analysts act as the intermediary between IT and the business to help business partners achieve their desired outcomes using technology

- **The Role of a Business Analyst**
  - The Business Analyst acts as the intermediary between the business and IT, using a deep understanding of business processes and technology to help business partners achieve their desired outcomes
- **A Business Analyst Does**
  - ✓ Identify unarticulated business needs and coordinate between stakeholder groups to address them
  - ✓ Provide consultative support on business-led technology initiatives
  - ✓ Create prototypes and codesign innovative solutions
  - ✓ Proactively monitor industry, functional, and technology trends
- **A Business Analyst Does Not**
  - × Design technical and functional aspects of information systems
  - × Necessarily need expertise in data analytics or statistical modeling

Framework for Business Analyst Effectiveness



Source: Gartner analysis.

Appendix: Interview Questions

Interview Approach

- Gartner developed the following interview guide to provide an advanced look at the questions and topics that were explored during peer state interviews.
- Each interview focused on the areas that were most pertinent to interviewees; however, the questions helped frame and initiate each discussion.
- There was no requirement for interviewees to document answers to questions ahead of time. Several peer state interviewees did provide additional documentation for review.
- The topics and questions outlined in this section can be leveraged in future discussions with additional peer states as Oregon's Transparency Program continues to grow.

Interview Questions

Topic	Questions
Introductions, Program History & Current Scope	• Please provide a brief description of your role(s) within your organization. • Please describe how your program was created (including any underpinning statutes), implemented and expanded over time. • What is the current focus of your transparency program — government financial transparency, or a broader scope? • How does your program interface with any related initiatives or programs in your state? (e.g., data privacy, open data, geospatial data sharing, etc.) • Who do you view as your key customers and stakeholders? The legislature, citizen developers, constituents?
Program Funding, Staffing & Operations	• Describe your program's funding sources and funding level. • What was your initial startup investment? How much investment was needed to complete any recent modernization projects? • How is your operational budget allocated to enable ongoing execution? (% staff, technology, etc.) • What is included in the operational responsibilities of your program? (Partner engagement, policy definition, maintaining a web presence, content management, portal or platform maintenance, etc.) • How many staff currently support your program and what are their specific roles? What do you view as the most critical skill-sets by role? • Describe your current operational processes for engaging stakeholders; requesting data; collecting data; aggregating and organizing data; processing, editing and packaging data; marketing and delivering data. • To what extent are your existing processes enabled through automation?

Interview Questions

Topic	Questions
Best Practices & Lessons Learned	• How do you measure and report on the success of your program? • To what extent does your program have top down support and sponsorship from key government leaders? • To what extent is the underpinning statute a critical enabler, or a challenge to overcome (e.g., overly restrictive, insufficient delegated authority, etc.)? • How well do you believe you have incorporated the use of human-centered design principles, analytics and a variety of user testing and user feedback methods for continuous improvement of the citizen experience? • How do you believe the program is perceived by participating agencies? (a compliance exercise, an opportunity to connect with constituents, etc.) • How did you overcome any organizational resistance for greater transparency? • What are the most critical best practices and lessons learned from your efforts to build out a Transparency Program in your state?
Future Considerations	• Briefly describe your future vision for your program, how do you anticipate the program changing? • What do you see as the highest value opportunities to advance your transparency program in the near term, and the longer term?
Wrap Up	• Are there other questions we should have asked you, or additional information that would like to share with us? • What additional advice would you provide to the Oregon CDO as she works to expand and enhance Oregon's Transparency Program

Appendix: Peer State Interview Participants

Peer State Interview Participants

State	Agency	Representative(s)	Interview Date
IN	Management and Performance Hub	• Josh Martin – Chief of Staff	13 January 2020
WA	LEAP	• Susan Howson – Administrator	15 January 2020
UT	Department of Technology Services	• Drew Mingl – State Data Coordinator	16 January 2020
AZ	Department of Administration	• Jeff Wolkove – State Data Management Architect • Angela Dillard – AFIS Statewide Accounting System Administrator	17 January 2020
CA	FI$Cal	• Joel Riphagen – Senior Advisor to FI$Cal Director	24 January 2020

Appendix: References

Gartner Research References

- 7 Ways to Maximize Impact from Open Government Data: Lessons from France
- Business Analyst Effectiveness Diagnostic
- Business Relationship Manager Role Profile
- Data Engineering is Critical to Driving Data and Analytics Success
- Data Scientist Job Description Template
- Hiring Guide and Job Description for Business Analyst
- Hiring Guide for Data/Information Architect
- Hiring Guide and Job Description for Data Scientist
- How to Get More Value From Data Visualization
- Interview Guide for Hiring Developers in the Digital Era
- Market Guide for Government Open Data Management Platforms
- Rethink Network Monitoring for the Cloud Era
- Structuring the Business Relationship Manager Role
- Toolkit: Sample Job Description for a Business Process Analyst
- Toolkit: Job Description for the Role of a Data Engineer
- Toolkit: Job Description for the Role of Data Scientist for Small/Emerging Teams

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- Gartner Interview with Oregon Transparency Program Manager & Website Administrator, Paula Newsome, December 2019.
- Gartner Interview with Indiana Management and Performance Hub, January 2020.
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