



Achieving Analytics Zen @ KHN

The Evolution of BI & Analytics at Kettering Health Network.

Steve Motil
Director of Analytics
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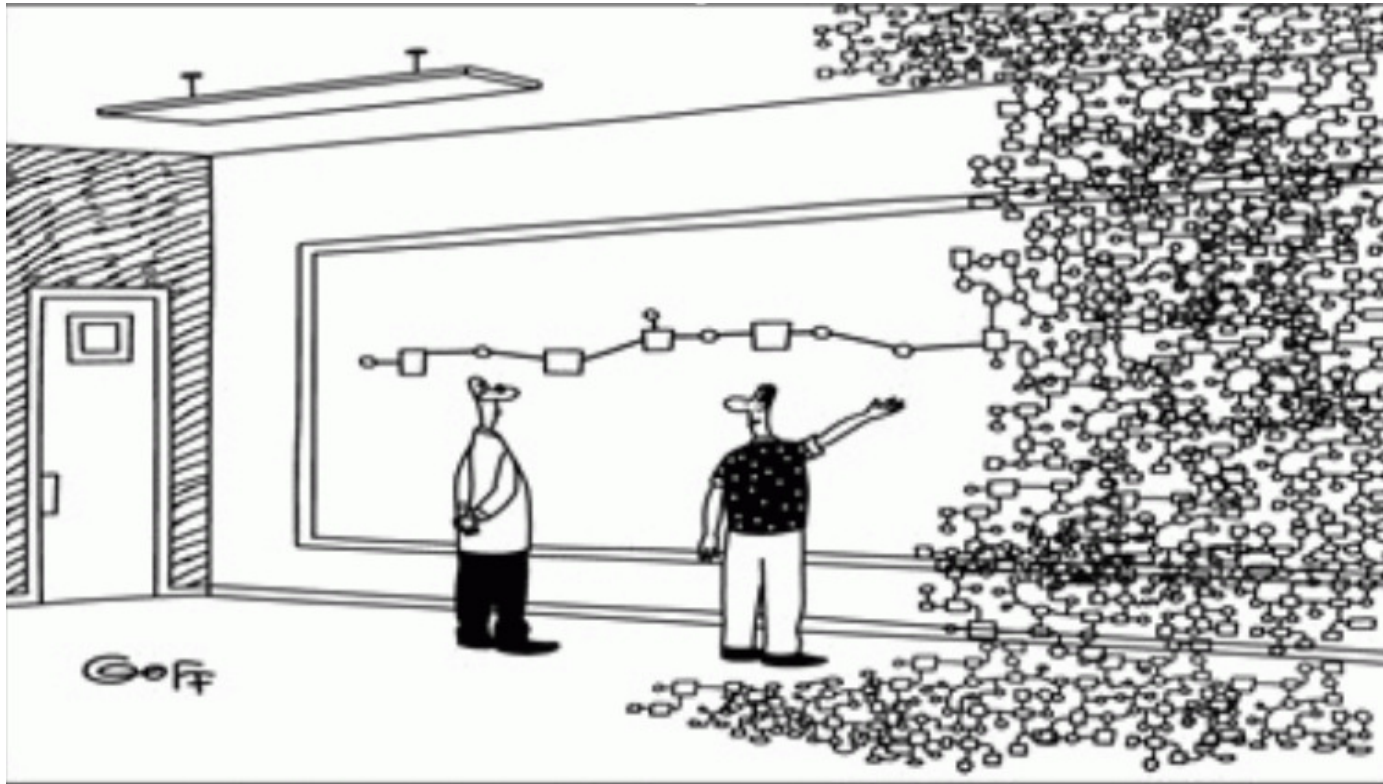
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Objectives

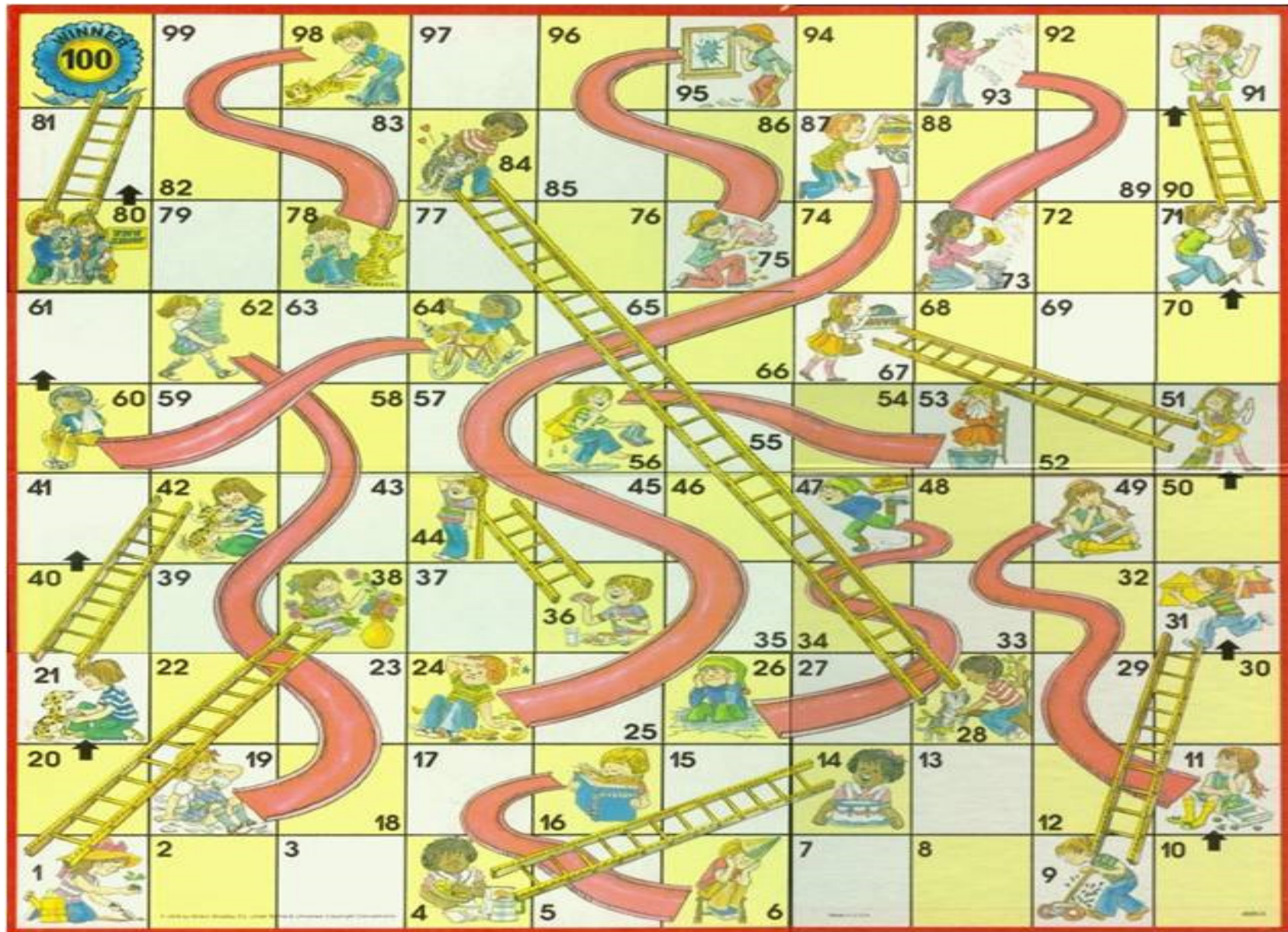
- This presentation will highlight Kettering Health Network's journey thus far around business intelligence and analytics.
 - How the Analytics Service was initiated, including governance strategy.
 - Strategy for a Business Intelligence Competency Center.
 - Looking Ahead



- **8 Hospitals**
- **10 Emergency Rooms**
- **75+ Outpatient Sites**
- **85 Physician Practices**
- **9 Counties Served**
- **12,000 Employees**



“This is where the idea for a new EHR starts getting a little complicated.”



HiMSS

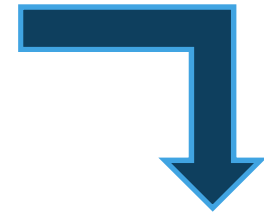
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Data Creation



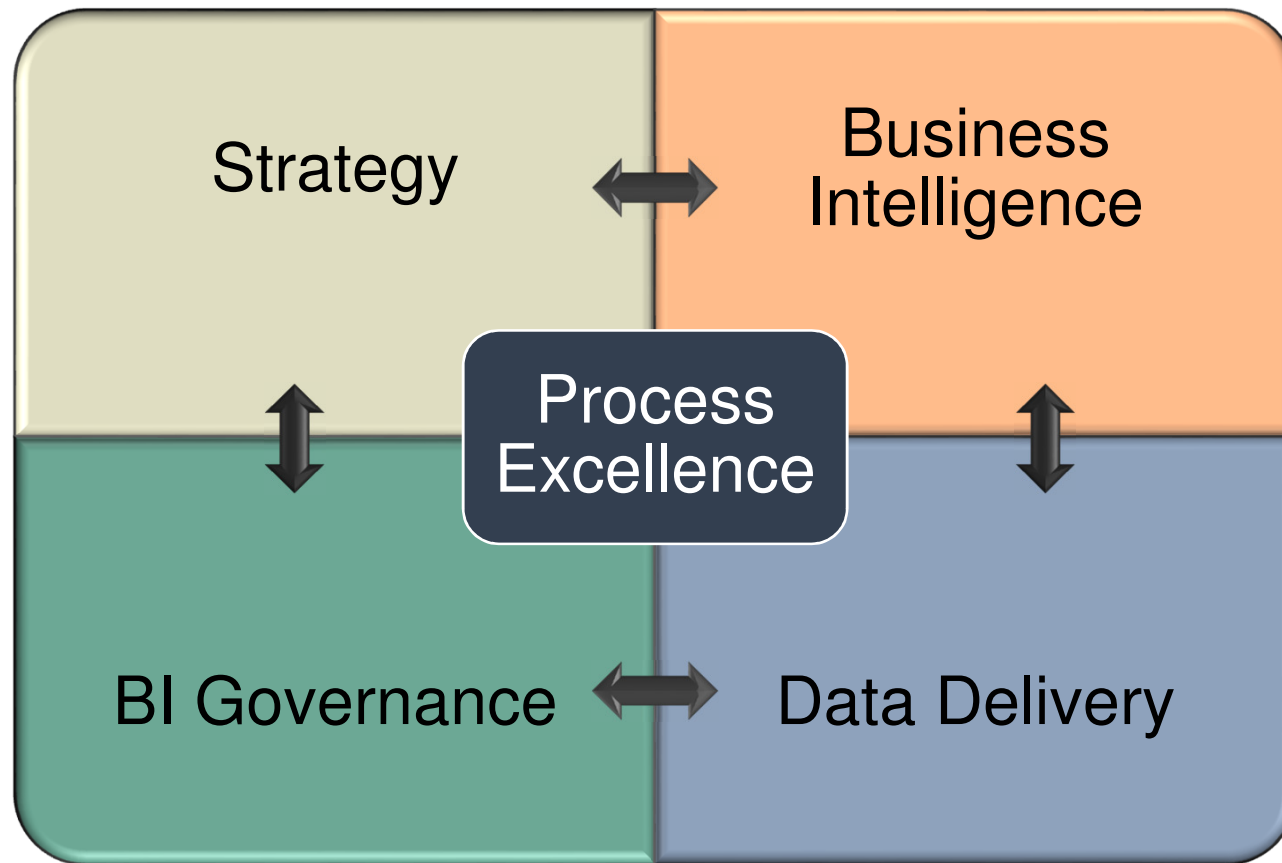
“BI and Analytics includes the generation, preparation, aggregation, analysis, and visualization of data to inform and facilitate business management and strategizing”



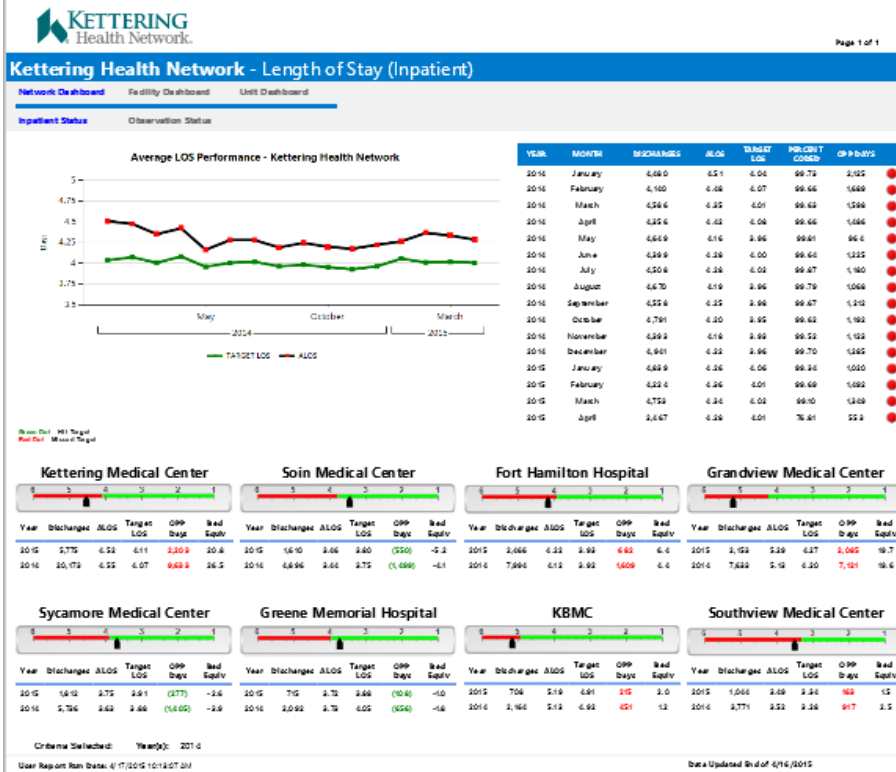
Data Driven Decisions



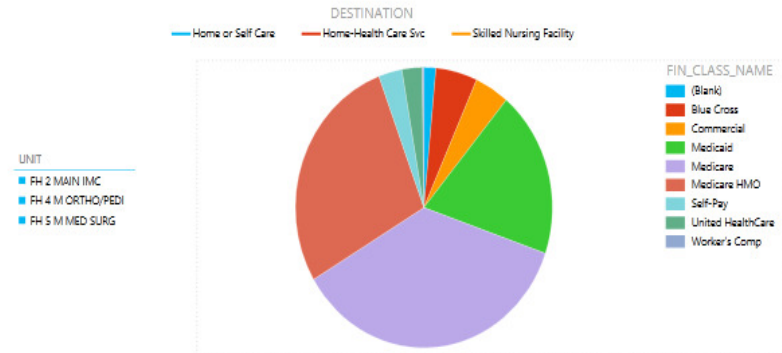
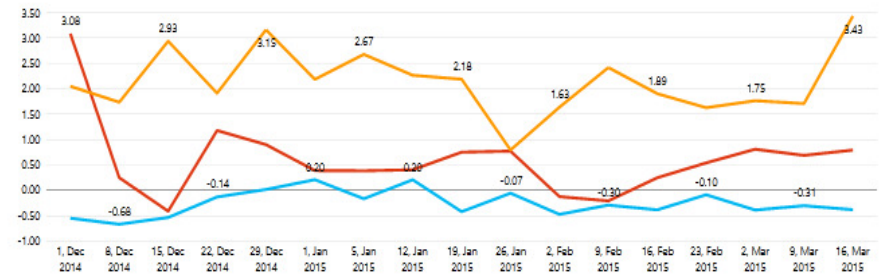
Developing a Model of Success



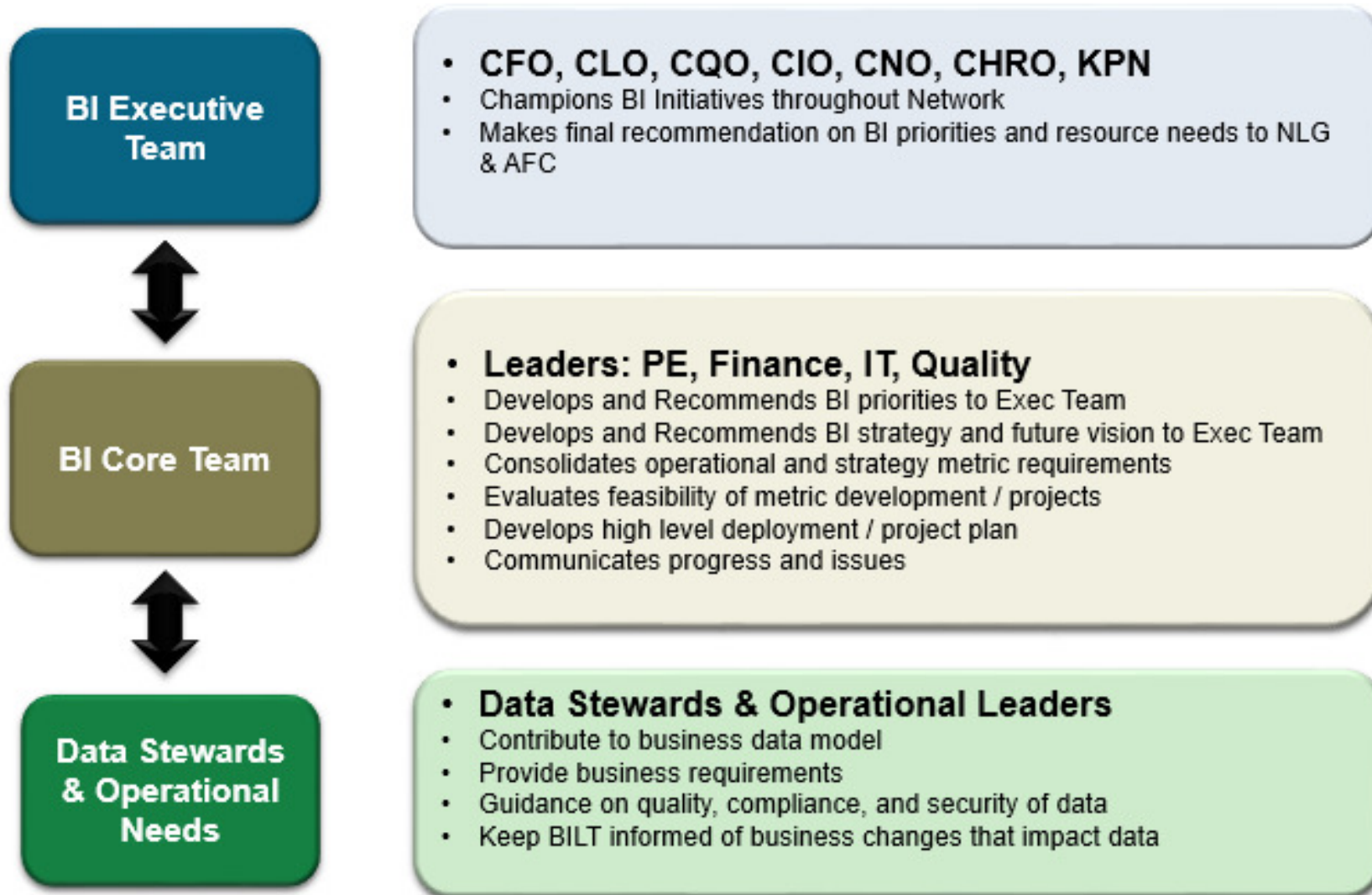
LOS – Transitions of Care



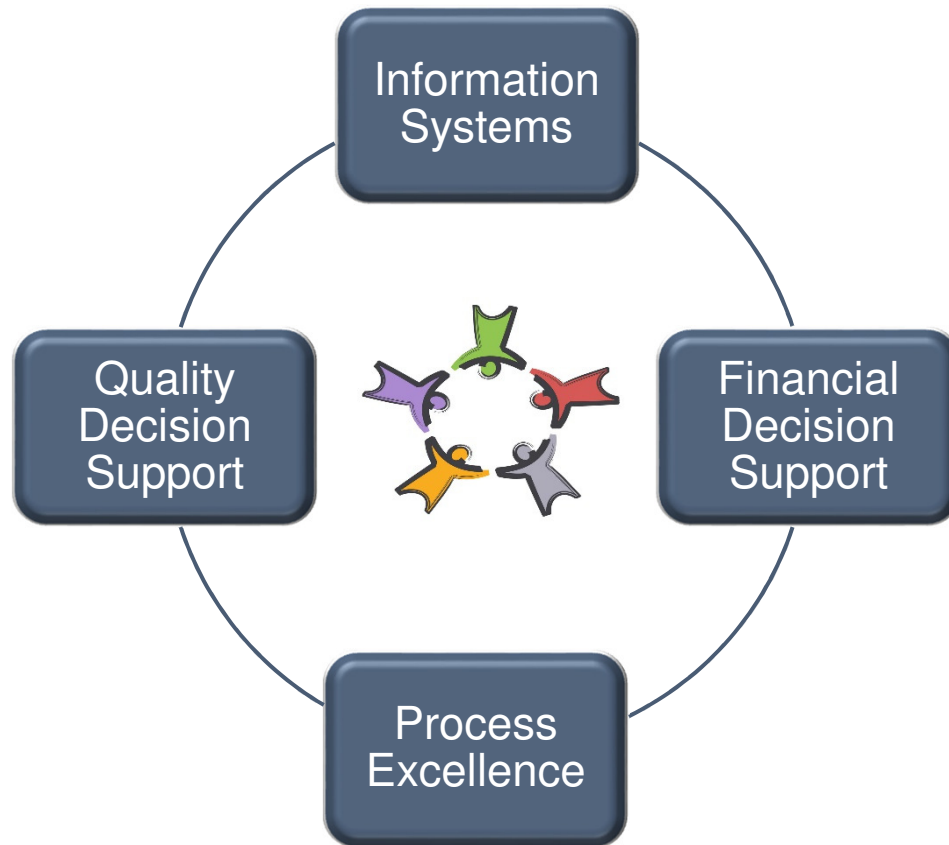
Opp Days per DC - Destination (For top destinations)



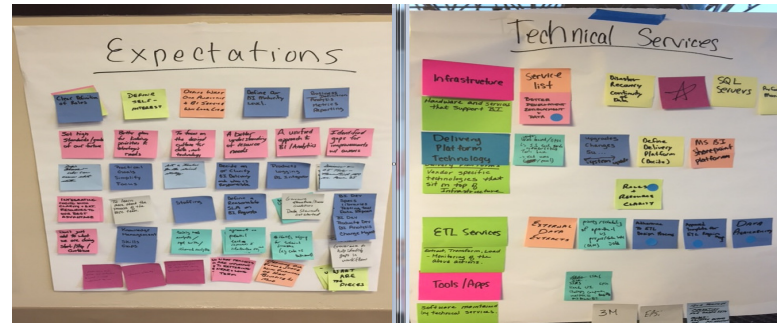
BI Governance Structure



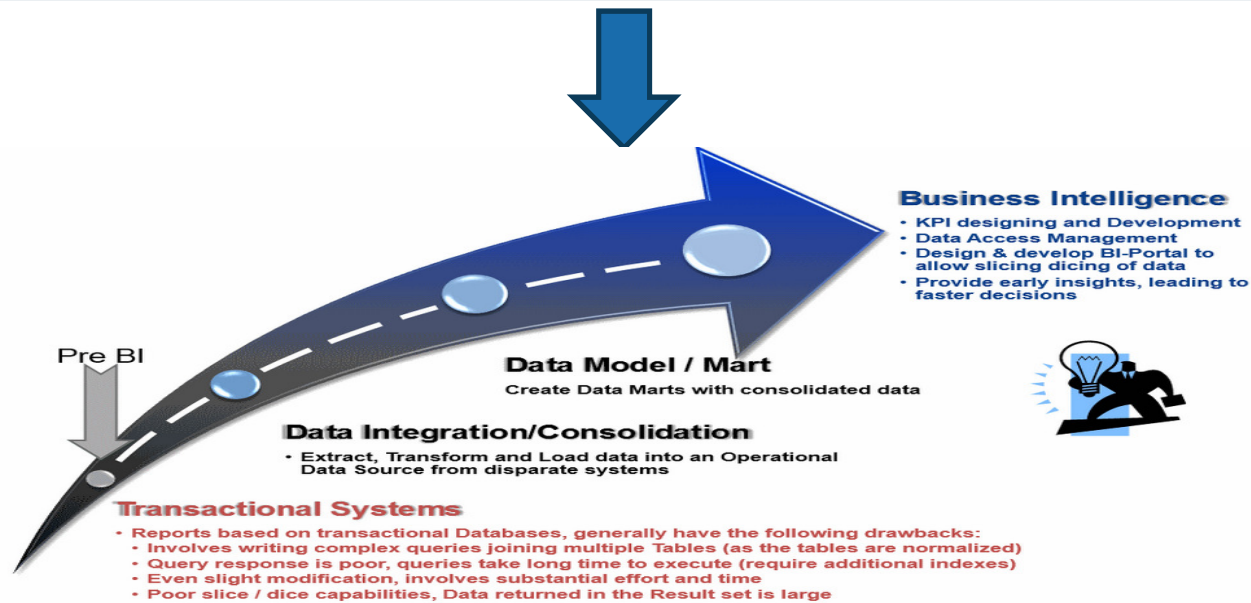
Collaborative Effort To Deliver Analytics and BI Solutions



Value Stream Analysis

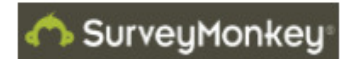


Definition: An approach to improve the effectiveness, quality and integration of desired processes and outcomes towards a common goal.



?Assessment?

Analytics and Business Intelligence Assessment Survey					
Subject Area	Project Management	Data Management	Technical Management	Training	BI Delivery
	2.80	2.30	2.70	2.80	2.90
	3.10	2.80	2.90	2.60	3.00
	2.70	2.10	2.40	2.00	3.22
	3.20	2.50	2.60		2.80
	3.20	3.20			2.50
	2.80				
	3.10				
Average	2.99	2.58	2.65	2.47	2.88



Business Intelligence Competency Center

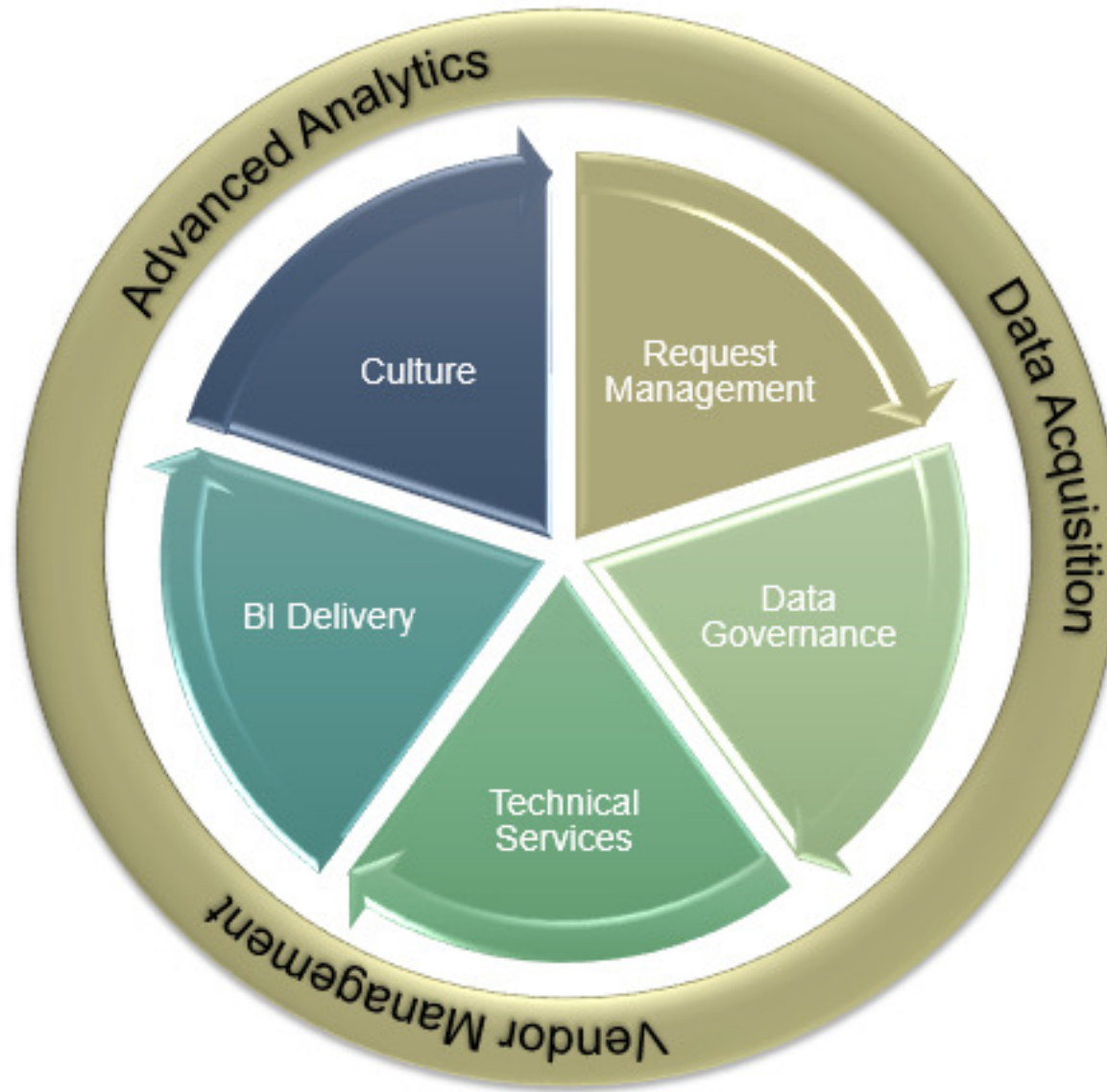
Definition

- Permanent and formal structure
- Representation from IT and the Business
- Advance and promote the effective use of Business Intelligence
- Develop, Support, and Implement organization's Analytics and BI strategy
- KHN BI Core team (IT, Financial DS, Quality DS, Process Excellence) is the origin for model's development

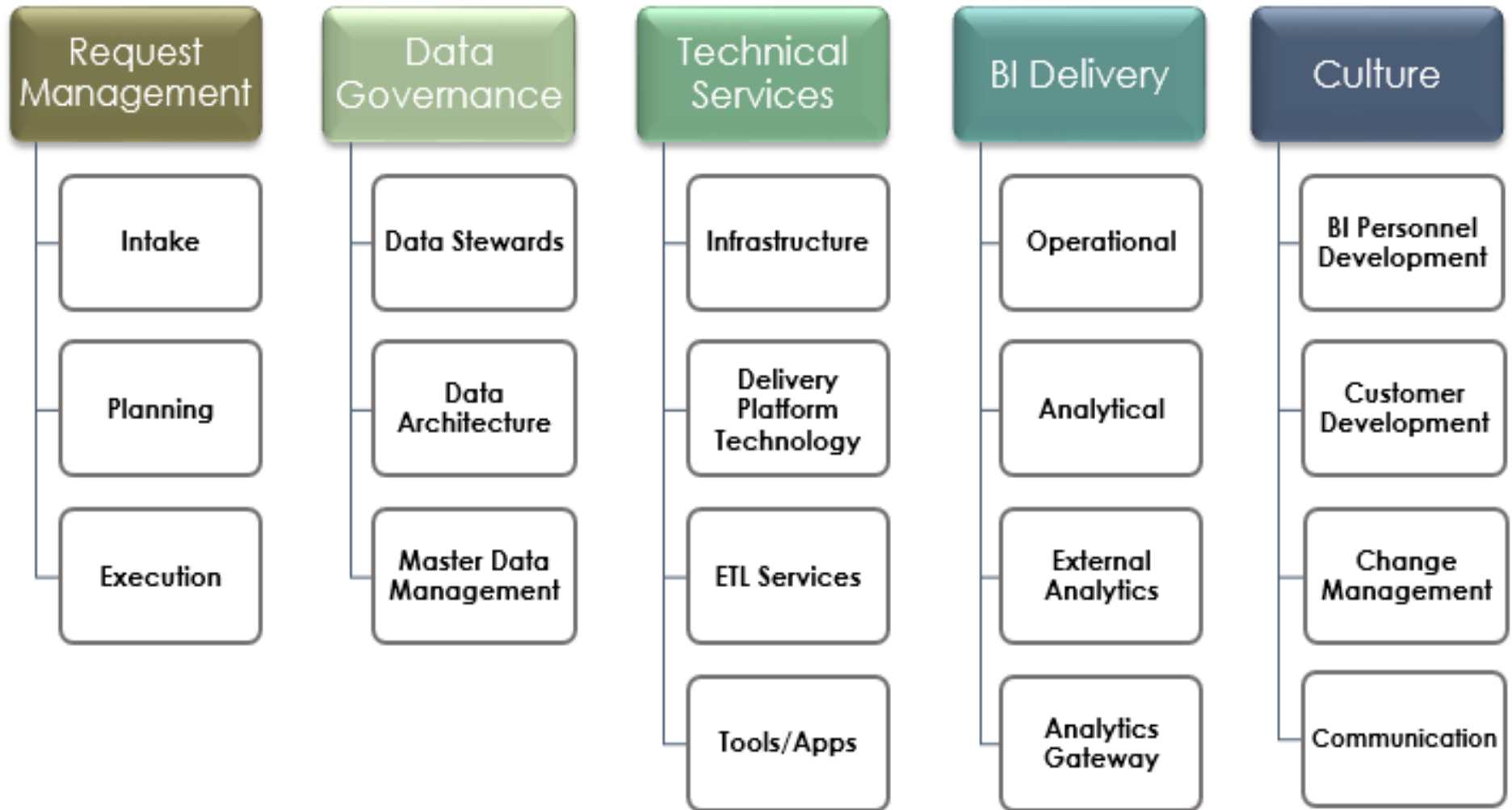
Role

- Standardize business and analytic intelligence processes and initiatives
- Oversee Governance (Overarching and Data)
- React faster to business changes
- Reduce overall risk of implementation projects and project realization
- Preserve and exploit the full value of technology investments
- Support end users in fully understanding data and acting properly on analyses
- Ensure that BI knowledge is shared throughout the enterprise


Business Intelligence Competency Center



BI Competency Center Foundation Areas



Looking Ahead....

-  Data Steward Program
-  Project and Service Request Management Process
-  Data Dictionary
-  Formal Data Governance Process
-  Training Programs and Support

Data Stewards

Business knowledge: Data stewards must understand the business direction, processes, rules, requirements and deficiencies.

Business-area respect: They need to influence business decisions and gain business-area commitments.

Analysis: When faced with multiple options, they must examine situations from many angles.

Facilitation and negotiation: They must facilitate the proponents of conflicting viewpoints to arrive at a mutually satisfactory solution.

Communication: Stewards need to effectively convey the business rules and definitions and promote them with the business areas as well.

Change Management: They must partner with Process Excellence to execute effective change.



KHN BI/Analytics Project Roles & Responsibilities

Intake/Triage	Business/Data Requirements	Data Preparation/ Design/Model	Production Build	Presentation Build	Validation/Testing	Training/Delivery
PE	PE	?	?	?	?	?
FDS	FDS	?	?	?	?	?
QDS	QDS	?	?	?	?	?
ES	ES	?	?	?	?	?
TS	?	TS	TS	?	?	?
Flexible Model = Team decides who owns and participates at each step						
Request Intake Scoring/Priority Request Triage	Business Objectives Situation Assessment Presentation Needs Access Security Data Goal Data Collection Data Description Data Quality	Data Selection Data Cleaning Data Integration Data Formatting Data Design Data Model	ETL Development Performance Testing/Mgmt	Presentation Design Presentation Build	Validate Data Test Performance Test Presentation Test Access	Execute Training Plan Execute Communication Plan Execute Deployment Plan Monitor/Maintain/Support
Project Initiation	Project Planning	Project Executing				

Data dictionary

- AllergyFact
 - AllergyProfileDim
 - ReactionProfileDim
- AttendingProviderFact
- BillingAccountEncounterMappingFact
- BillingAccountFact
 - BillingAccountProfileDim
 - BillingAccountServiceProfileDim
 - BillingAccountStatusProfileDim
- BillingTransactionFact
 - BillingTransactionChargeProfile...
 - BillingTransactionProfileDim
- ChargeCostMappingFact
- CodedProcedureFact
 - CodedProcedureProfileDim
- DiagnosisEventFact
 - DiagnosisProfileDim
- EdVisitFact
 - EdVisitProfileDim
- EncounterFact
 - EncounterProfileDim
 - EncounterAttributeValueDim
- EncounterRegistryValueFact
 - EncounterRegistryProfileDim
- FlowsheetValueFact
 - FlowsheetValueProfileDim
- HospitalAdmissionFact**
 - AdmissionProfileDim
 - DischargeProfileDim

HospitalAdmissionFact

The hospital admission fact contains information about hospital admissions. Each row represents a hospital admission encounter. [+ Notes](#)

For Epic data, the fact includes records with an inpatient encounter type.

Properties

Granularity	A hospital admission encounter
Profile tables	AdmissionProfileDim , DischargeProfileDim , HospitalAdmissionProfileDim
Links to	AdmissionProfileDim , CoverageDim , DateDim , DepartmentDim , DiagnosisBridge , DiagnosisDim , DischargeProfileDim , DrgDim , DurationDim , EncounterFact , GuarantorDim , HospitalAdmissionProfileDim , PatientDim , ProcedureTerminologyDim , ProviderDim , TimeOfDayDim
Links from	AttendingProviderFact , EdVisitFact , HospitalAdmissionAttributeValueDim
Change type	Type 1

ID Types

EpicEncounterCsnId	Epic hospital admission encounter
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Columns

[Expand All](#)

▶ HospitalAdmissionKey : integer	Surrogate key used to uniquely identify the record
▶ IdType : string	Source ID type for the record
▶ Id : string	Source ID for the record
▶ PatientKey : integer	Patient associated with the hospital admission Links to PatientDim

Training



Improving People, Process, & Technology...
in that order.

LOS Analytics

LOS eLearning

PRESS PLAY FOR NAVIGATION INSTRUCTIONS

Length of Stay Reporting Dashboard

Click the right arrow at the bottom of the screen to advance to the next page, or the back arrow to revisit the previous page.

To return to the main menu, click the menu button in the left navigation pane.

To begin, click the LOS eLearning button above.

Kettering Health Network



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Analytics / BI Gateway



Intranet

[My Intranet](#) | [Staff Directory](#) | [Help](#)

Search intranet or staff directory

[Return to old intranet](#)

[Home](#) [HR](#) [Patient Experience](#) [Quality & Safety](#) [Policies](#) [Tools](#) [Resources](#) [Learning](#) [Analytics](#)

KHN Analytics



Financial

Standard reporting of key metrics such as hospital and department volumes, service line reporting, market share, and profitability.

[Financial Decision Support Site](#)



Clinical/Quality

Dashboards and tools to monitor Quality Metrics (Network, Facility, & Unit) and Quality Initiatives (CMS Healthcare Reform).

[Clin/Quality Decision Support Site](#)



Strategic Initiatives

Information focusing on One Best Practice supporting Mission and Culture, Quality & Safety, and Financial Performance relating to Network initiatives.

[KHN Length of Stay Dashboards](#)

- [Network Dashboard](#)
- [Facility Dashboard](#)
- [Unit Dashboard](#)
- [Training](#)
- [Glossary](#)



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Reporting Community

- **WHO:** Clarity Reporting + Reporting Workbench Application Analysts
- **WHAT:** A place for us to share, collaborate, teach, inform, problem solve and leverage talents.
- **WHEN:** 1st Wednesday of Every Month
- **WHY:**
 - ✓ Develop/Enhance Training our users can learn and benefit from.
 - ✓ Develop/Enhance trouble shooting abilities across teams.
 - ✓ Understand current state and work on developing standards for reporting across the Epic environment.



KHN Information Systems Strategic Anchor

Improve
People, Process, **Data, &**
Technology
...in that order

Questions?