Support all relevant subject areas and data in QUALITY Ensure data is trustworthy and accurate. LAYERS OF ABSTRACTION Use mapping layers and reusable objects to ensure consistency and reduce the time needed Provide access to all data—not just data in the data warehouse—using federated query tools.

MANAGE EXPECTATIONS Q Create a visual plan that provides executives with a timetable for application delivery. NEWSLETTERS Publish monthly newsletters that describe CHANGE MANAGEMENT new functionality and timetables.

Foster business ownership of the BI program.

COVERAGE

Deliver data in a timely fashion, whether monthly,

TIMELINESS

ATOMIC DATA

users require.

DATA Q

FLEXIBILITY O

daily, hourly, or in real time.

Store detailed data so it can be easily

repurposed in different applications as

FEDERATED ACCESS

BI GOVERNANCE PROGRAM

the data warehouse.

TOWN HALL SESSIONS Regularly exhibit BI functionality in open meetings.

CAMPAIGNS

road shows, etc.

Initiate marketing campaigns via posters, e-mail,

O LEADERSHIP ROLE MODELS Executives need to use BI tools, not just bless the official standards.

BI USABILITY MIND MAP

MARKETING O

COLLABORATION

O DELIVERY

collaborate on reports.

Collaboration tools must allow users to comment and

DIVERSE CHANNELS

e-mail, mobile).

ARCHITECTURE

VISUALIZATION

NOTIFICATION

with results.

BI tools must deliver insights to users via their

preferred channels (e.g., desktop, Web,

BI tools should let users visualize and interact

Users should be able to set alerts that notify them

thought analysis.

O PERFORMANCE

Support fast query performance and speed-of-

QUERY COMPLEXITY

degrading performance.

Support lots of concurrent users without

BUSINESS INTELLIGENCE

USABILITY

USER CONCURRENCY

degrading performance.

Support complex queries without

of significant events that occur in the data.

The four main components that affect usability are design, support, architecture, and change management. Each contains three or more subcomponents that consist of multiple implementation practices. BI teams should apply these components and practices to ensure their BI initiative remains in a positive reinforcing cycle.



EXECUTIVE MANDATES

CERTIFIED REPORTS

corporate standard.

nonstandard BI environments.

Standardized reports need to be certified as

accurate and blessed by executives as the

Executives need to grandfather or shut down

MONITOR USAGE

Know how users and groups use the system and to what degree. Regularly survey users about their BI experience.

Examine and measure the effectiveness of every BI project, especially failed ones.

HELP DESK Track and catalog questions

received by the support desk.

SUPPORT

FEEDBACK O

TAILOR TO USERS

O TRAINING

Train users to use the tool with their data and metadata.

EDUCATION

Offer classroom, online, and self-paced training.

TEACH NUMERACY

Teach users how to interpret data and what actions to take.

TRAIN THE TRAINERS Train users in the field to train their colleagues.

HELP DESK

Provide person-to-person direct support.

SERVICES

ONLINE SUPPORT

Provide online help and frequently asked questions.

METADATA

Provide one-click lookup of the definitions and lineage of critical data elements.

MENTORING

Provide one-on-one support, especially for executives.

SPIRAL TECHNIQUES

Design, prototype, and deliver BI applications based on user requirements in short cycles.

RAPID DEVELOPMENT

AGILE TECHNIQUES

Use small teams, frequent feedback, and short iterations.

PROTOTYPES

Use prototypes to mock up the application you are building to get feedback and clarify requirements before coding.

Embed BI reports and functionality in portals and enterprise applications.

ROLES

REQUIREMENTS

MAP INFORMATION TO ROLES

Understand users' roles and the information and BI functionality required for each role.

FIT TOOLS TO ROLES

Purchase tools that support the BI functionality

required by each role.

ANALYSIS/DESIGN

FOLLOW TDWI FRAMEWORKS

Adhere to TDWI's component and

GO MAD (MONITOR, ANALYZE, DRILL TO DETAIL)

Design a layer BI environment that parcels out information on an as-needed basis.

BI FRAMEWORKS 🔾

SUPPORT SELF-SERVICE

Provide ad hoc report creation to power users and ad hoc report navigation to casual users.

MAP PROCESSES

Ask "What are you trying to accomplish?" instead of

ASK THE RIGHT QUESTIONS

"What data do you want?"

process and understand all inputs, outputs, and triggers.

Know the business so you can speak the same

language and anticipate requirements.

KNOW THE BUSINESS

UNDERSTAND GOALS AND INCENTIVES

Understand users' goals and incentives to

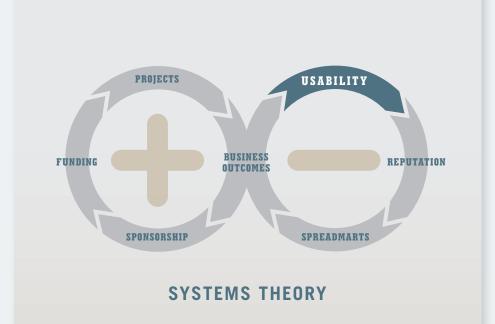
determine the information they need.

BI DYNAMICS | Systems Theory

BI. It consists of two adjacent feedback loops: one that inhibits growth (a negative reinforcing cycle) and another that accelerates it (a positive reinforcing cycle). Both hinge on a condition called "business outcomes" that represents the BI solution's value to the organization.

The "slowing action" cycle on the right shows how a lack of usability in a BI solution gives the BI team a bad reputation, causing users to create spreadmarts (renegade BI systems or data shadow systems built outside of IT) rather than use the corporate-provided BI tools. This negative business outcome causes executive sponsors to question the value of their BI investment and reduce funding, which impacts future projects and limits a BI team's ability to deliver a usable solution. The cycle usually repeats until the organization either cancels the BI program or the BI team figures out a way to halt the downward spiral.

demonstrates that it can reduce costs, increase revenue, advance business



strategy, or deliver consistent information and improve decisions, executives are likely to boost funding for new projects, adding even more business value. This positive reinforcing cycle accelerates until it reaches the natural limits of its growth and begins to reverse course (hence the name "limits to growth").

In the world of BI, each element within the feedback loops (usability, reputation, spreadmarts, sponsorship, funding, and projects) is a leverage point that BI teams can use to alter the cycle of growth or decline. USABILITY is perhaps the most critical and the most challenging.

ABOUT THE AUTHOR

Wayne Eckerson is the director of TDWI Research at The Data Warehousing Institute. Eckerson is an industry analyst, consultant, and educator who has served the DW and BI community since 1995. He speaks frequently at industry events and works closely with BI teams to optimize the agility and value of their

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Systems theory provides a "limits to growth" archetype that we can apply to

On the left, we see the growing action that comes as business sponsors fund new BI projects that lead to positive business outcomes. Once a BI project

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