

OPERATIONALIZING PREDICTIVE ANALYTICS

For Advancement of Higher Education Practices



TEXAS A&M UNIVERSITY

COMMERCE

YOUR PRESENTERS



Carlos Rivers

Operations Research Analyst
Institute for Competency-Based Education



Jeremy Anderson

Research Analyst
Institutional Effectiveness & Research



Shonda Gibson

Associate Provost
Institutional Effectiveness
SACSCOC Accreditation Liaison



TEXAS A&M UNIVERSITY

COMMERCE



FOUNDED IN 1889



PUBLIC, DOCTORAL, R2

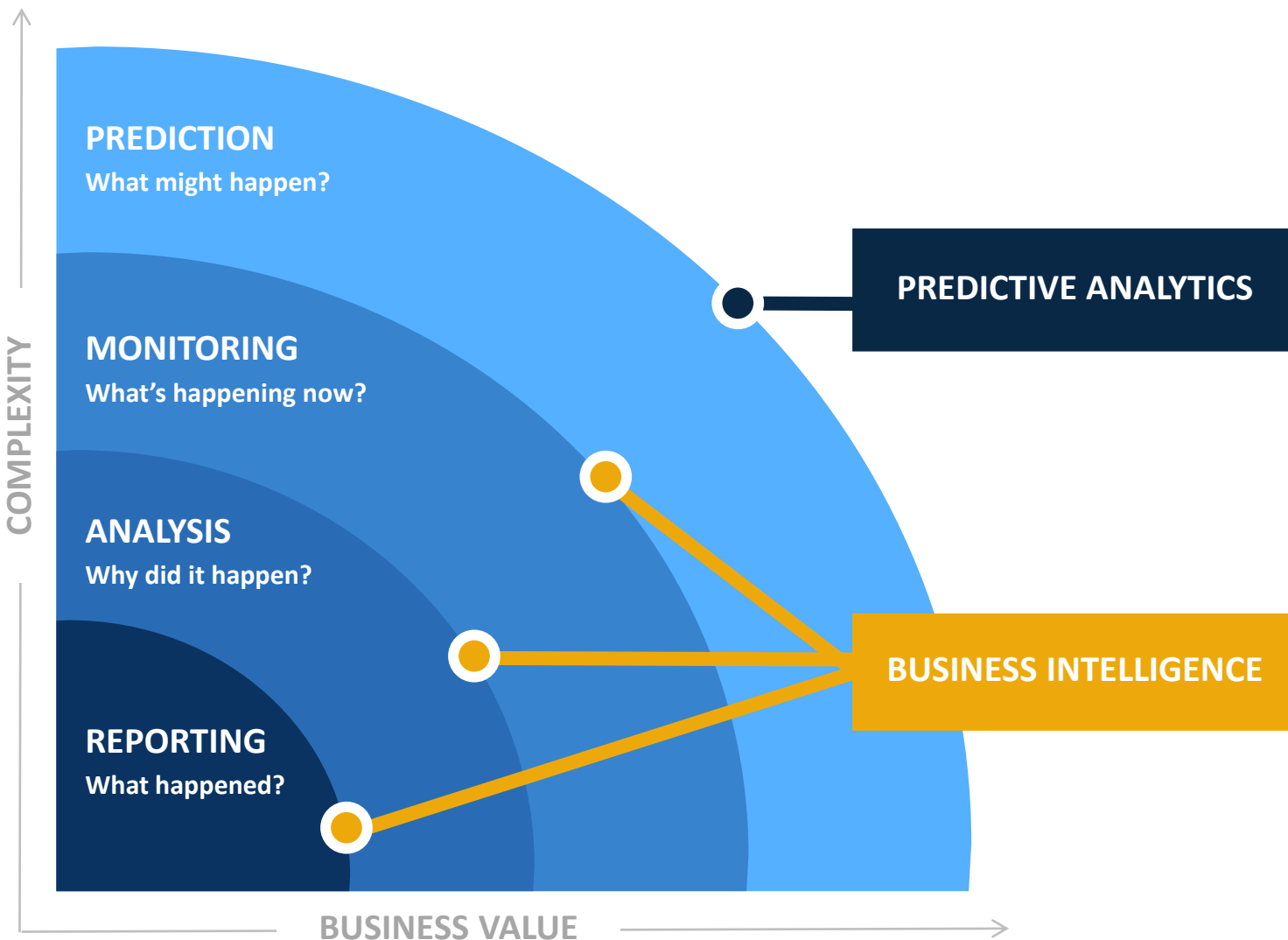


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INSTITUTIONAL RESEARCH

Institutional Research (IR) supports the ongoing process of collecting, analyzing, reporting, and warehousing quantitative and qualitative data about the institution's students, faculty and staff. IR provides information to support university decision-making through a variety of analytic activities, data-gathering tasks, and research projects. IR works with offices and individuals internally and externally to maintain data/report integrity and quality to fit for their intended uses in operations, decision making and planning.



Predictive Analytics

AT A GLANCE

What is it?

The practice of extracting information from existing data sets in order to determine patterns and predict future outcomes and trends.

Why use it?

Use predictions to act on that knowledge in order to potentially take advantage of a future opportunity or mitigate any potential risk.



PREDICTIVE ANALYTICS BACKGROUND

- University had an existing external predictive analytics provider
 - Report users wanted to better predict student success
 - Administrators wanted to better allocate staff time & resources
 - IER wanted to build predictive models in-house
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LOCALLY DEVELOPED

- No dependency on external providers
 - Flexible & Cost efficient solution
 - Leveraged existing university reporting software
 - Partnership between IER & ICBE
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A graphic consisting of two overlapping rectangular frames. The front frame is a thick orange border, and the back frame is a thin light gray border. The text 'WEBFOCUS RSTAT' is centered within the orange frame.

WEBFOCUS RSTAT

- Add-on to existing university reporting software
 - Leverages the power of R
 - Graphical User Interface (GUI)
 - Ease of predictive model deployment to existing user reports
 - Better use of staff time & resources
 - Limitless applications
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INTERNAL USER EXAMPLE

- Enrollment Management Division:
 - VP of Enrollment Management
 - Admissions Director
 - Financial Aid
 - Registrar office
 - Admissions Recruiters

Business OBJECTIVE

Increase freshmen enrollment for Fall 2018

IER Solution:

- Create enrollment probabilities for all admitted freshmen students
- Deploy enrollment model to existing Enrollment Management reports
- Rank students by enrollment probabilities to focus on top enrollment targets

CRISP-DM Model

The model splits a data mining project into six phases and it allows for needing to go back and forth between different stages.



Cross Industry Standard Process for Data Mining

WEBFOCUS R-STAT DEMO

WebFOCUS R-STAT delivers powerful predictive analytics functionality. Business users can leverage a single integrated solution for BI, data modeling, and scoring, so they can make decisions based on accurate, validated future predictions instead of relying on gut instinct alone.

The screenshot displays the WebFOCUS R-STAT interface for a project named 'WEBFOCUS - [RStat (HOLD.csv)]'. The interface includes a menu bar (Project, Tools, Settings, Help) and a toolbar with buttons for Execute, New, Open, Save, Export, Stop, and Quit. Below the toolbar is a 'Data' section with tabs for Explore, Test, Transform, Cluster, Associate, Model, Evaluate, and Log. The 'Source' is set to 'CSV File'. The 'Filename' is 'HOLD.csv', and the 'Separator' is a comma. The 'Partition' checkbox is checked, with 'Percentage' set to 70, 'Count' set to 2100, and 'Seed' set to 42. The 'Target Data Type' is set to 'Auto'. A table below shows the variable selection configuration:

No.	Variable	Data Type	Input	Target	Risk	Ident	Ignore	Weight	Comment
1	ID	Numeric	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	Unique: 3000
2	COLL_CODE1	Categorical	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Unique: 5
3	DEGC_CODE1	Categorical	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Unique: 13
4	MAJR_CODE1	Categorical	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Unique: 57
5	HIGH_SCHOOL_PERCENTILE	Numeric	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Unique: 99 Missing: 179
6	GENDER	Categorical	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Unique: 2
7	FINAID_APPLICANT_IND	Categorical	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Unique: 2
8	ADMIT	Constant	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	Unique: 1
9	ENROLLED	Categorical	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Unique: 2

At the bottom of the interface, a note reads: 'To Begin: Choose the data source, specify the details, then click the Execute button.'

PREDICTIVE ANALYTICS
FOR HIGHERED

USE CASES

Empower the institution to be able to build/use predictive models to deliver insight and help drive data driven decisions that ensure institutional and student success.

Enrollment

Retention

Graduation

Financial Aid



ANY QUESTIONS?

**YOUR
VOICE
MATTERS**



Jeremy.Anderson@tamuc.edu

Carlos.Rivers@tamuc.edu

Shonda.Gibson@tamuc.edu

CONNECT WITH US
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