

> Data-Driven Enrollment Management: Proactively Recruiting and Retaining Your Student Body

SPSS

- The audio portion of this event will come through your computer speakers. (see adjusting volume control below)
- If you do not have functioning speakers, and would like to dial in to the call using your telephone, please dial:

US/Canada Toll Free: 866-469-3239

US/Canada Toll: 650-429-3300

*****Event Number: 665 371 575**

Upon joining the call, you will not hear hold music. Periodic announcements will be made to test the volume through your speakers.

Q & A

- Type any questions into the Q&A Tab on the right

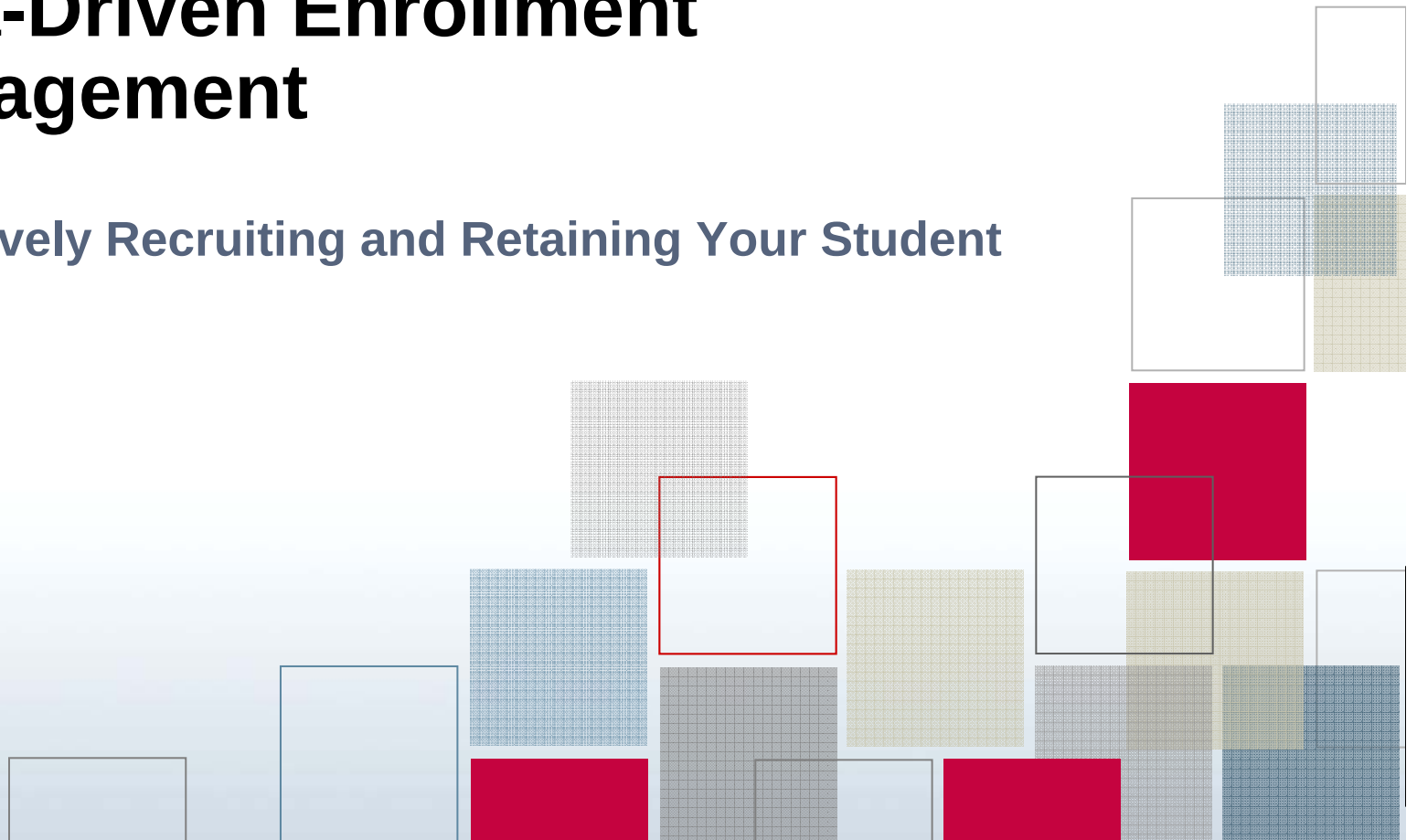
Adjusting volume control

- Through the Volume Control Panel on your computer
- Through the Webex Audio Broadcast window (see image below). You can adjust the volume slider on this control as needed.

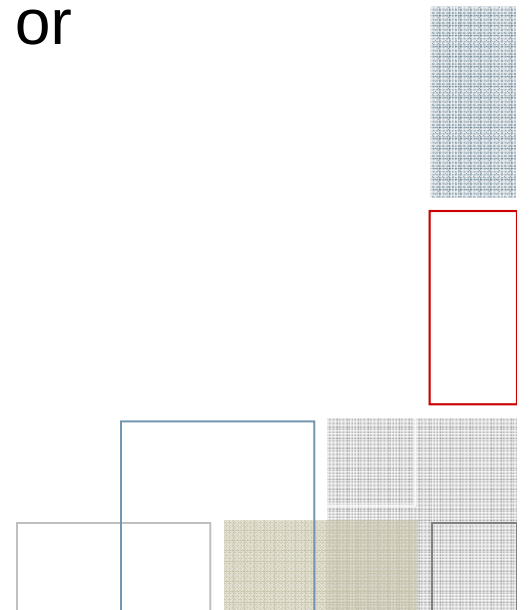


> Data-Driven Enrollment Management

Proactively Recruiting and Retaining Your Student Body



1. Will I be able to get copies of the slides after the event?
2. Is this web seminar being taped so I or others can view it after the fact?



> Commonly Asked Questions

SPSS

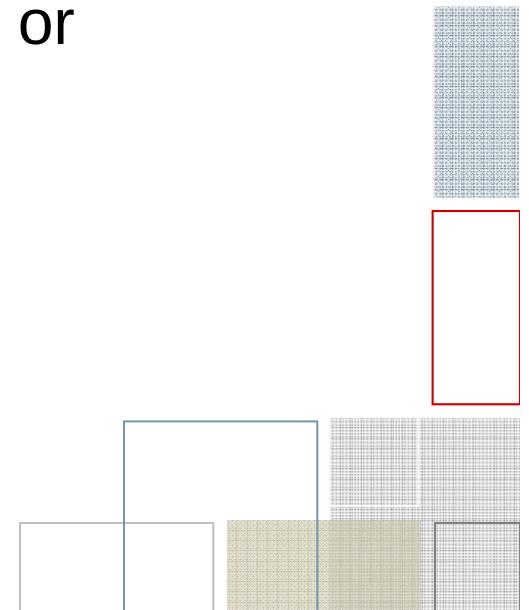
1. Will I be able to get copies of the slides after the event?

Yes

2. Is this web seminar being taped so I or others can view it after the fact?

Yes

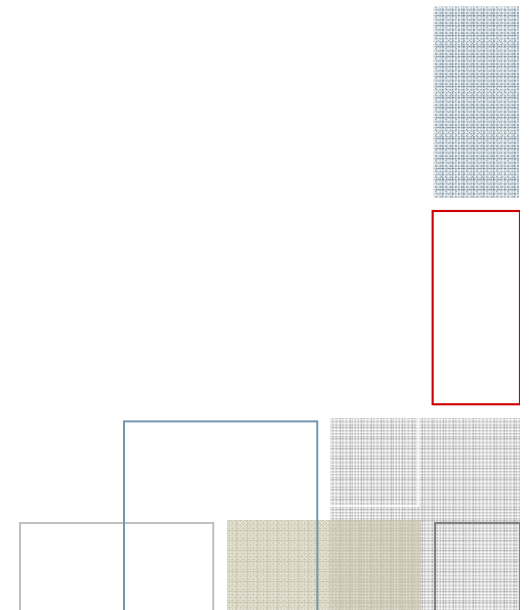
www.spss.com/events



> Agenda

SPSS

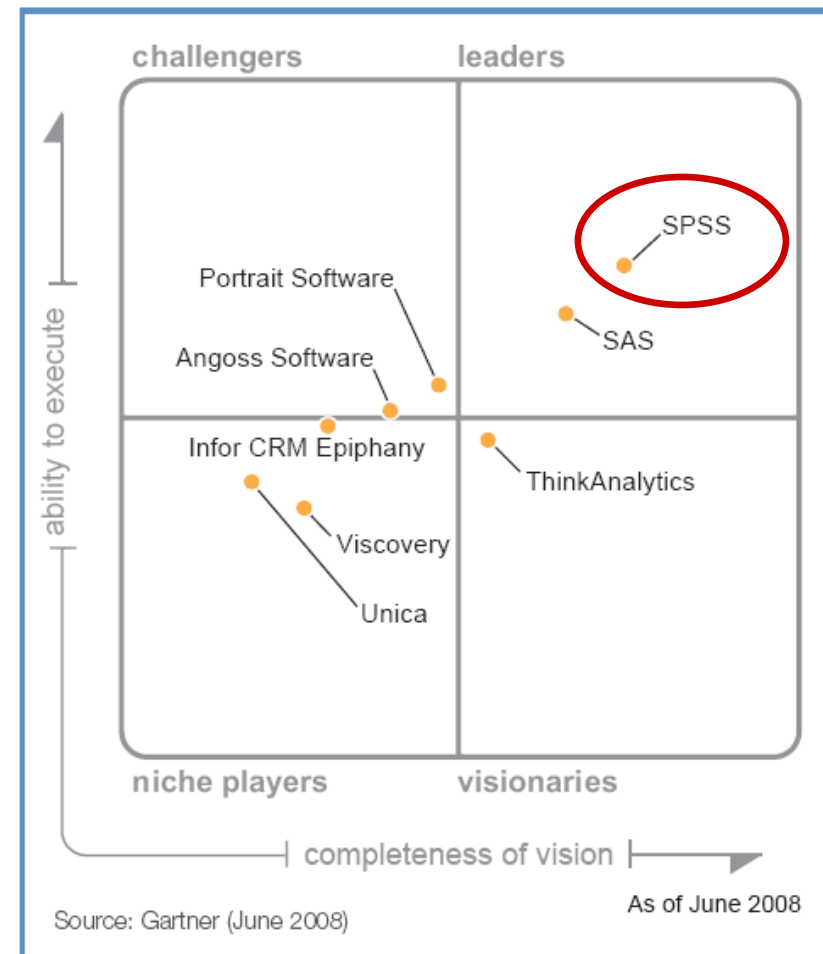
- Who is SPSS?
- What is Predictive Analytics and how does it apply to Enrollment Management?
- The state of analytics in Enrollment Management
- The ROI of Predictive Analytics in Enrollment Management
- 3 Key Ways Predictive Analytics can help your Enrollment Management Office
 - Benefits
 - How the technology works
 - What you need to know to get started
- Who's doing this? Examples from the Field
- The ROI of Predictive Analytics
- Why SPSS?
- Summary



> Who is SPSS?

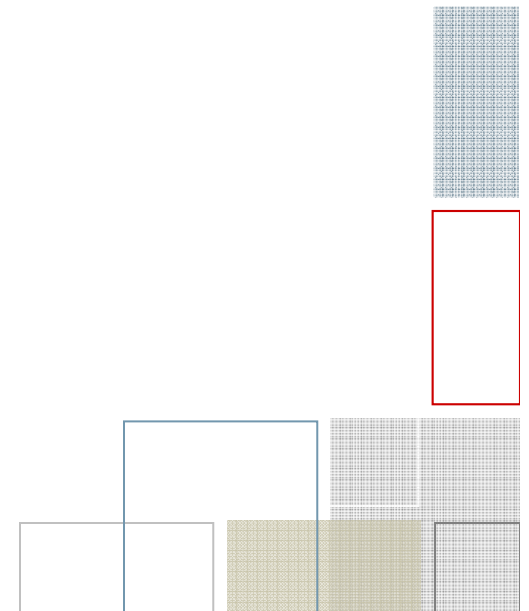
SPSS

- Global market leader in predictive analytics
- Top 25 software company
- Founded in 1968 at Stanford.
- NASDAQ-listed (SPSS) in 1993
- Operations in over 60 countries
- Customers: All 129 of the top U.S. colleges and universities ("America's Best Colleges 2005," *U.S. News & World Report*)



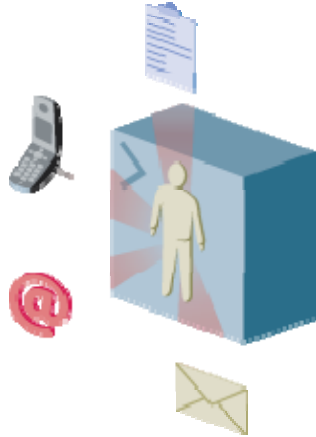
> What is Predictive Analytics?

- Predictive Analytics is...
 - A method for collecting and analyzing data—attitudinal, behavioral, structured, unstructured, etc.—in order to understand applicants, students, or other constituents; and use this insight to direct, optimize, and automate **data-driven decision making**.
- Predictive Analytics delivers...
 - Return on Information
 - Return on Investment

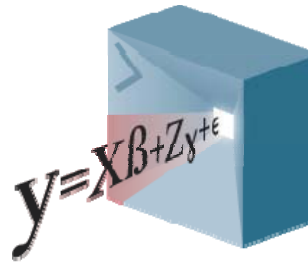


> What types of technology constitute “Predictive Analytics?”

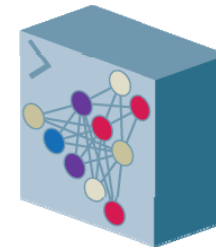
SPSS



Data Collection



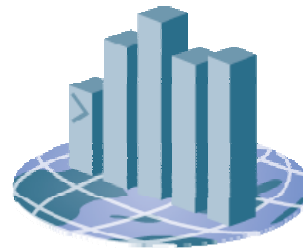
Statistics



Data Mining



Text Mining



Web Mining



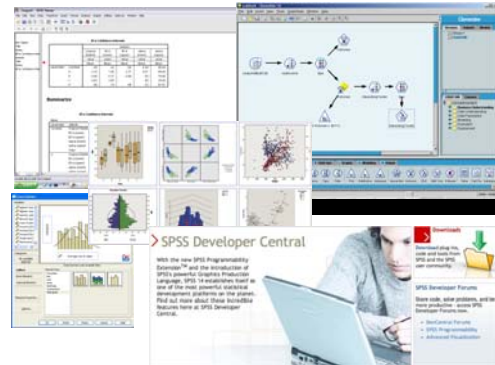
Optimization
and Deployment



> How are these technologies applied to Enrollment Management?

SPSS

Capture contextual information and utilize all data sources available



Predict

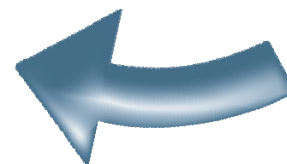
Recommend the most appropriate action to take; eg: what form of merit or financial or merit aid to offer an applicant, whether or not intervention is necessary to keep a student in school, etc.



Capture

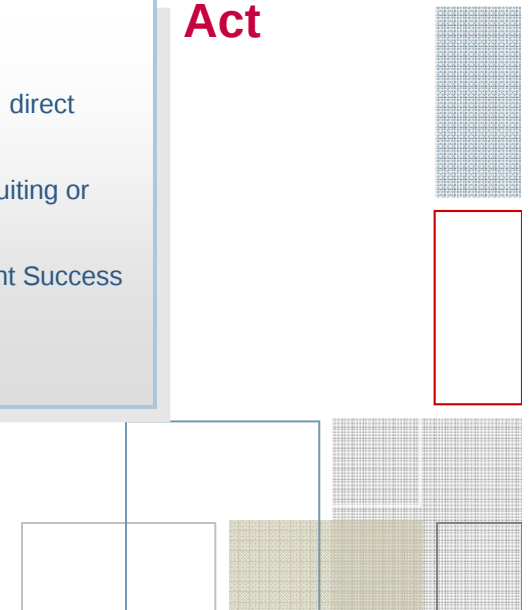


Store detailed data on applicants, students, etc.



Act

- Event invitation
- Phone call, email, direct mail
- Meeting with recruiting or advising officer
- Referral to Student Success Center
- Etc.



> What are institutions doing today?

Table 7-10. Use of Academic Analytics in Enrollment Management and Retention

Enrollment Management (N = 356)	Mean	Std. Deviation
Automatically alert appropriate officials when an enrollment metric falls outside a desired range	2.75	1.449
Forecast future demand for courses	2.50	1.176
Identify potential students who are the strongest prospects for admissions	2.95	1.312
Tailor a recruiting strategy for an individual prospective student	2.38	1.283
Retention (N = 362)	Mean	Std. Deviation
Identify students who may be at risk academically	3.14	1.217
Alert an appropriate official when an academic intervention with a student is warranted	2.56	1.319

(1 = almost never, 2 = occasionally, 3 = sometimes, 4 = usually, 5 = almost always)

Source: ECAR, Academic Analytics: The uses of Management Information and Technology in Higher Education, Phillip J. Goldstein, December 2005.

> **How can predictive analytics be applied in our Enrollment Management Office?**



> Idea 1: Ongoing, multi-channel data collection

▪ Benefits:

Data Collection

- Better understand attitudes, preferences, values to better target admissions offers, improve engagement of current students, etc.
- Create another touch point with your applicants and students and demonstrate that you value their opinion
- Increase the accuracy of predictive models- by up to 30%

Ongoing

- Ongoing data collection keeps you abreast of changes in prospective and current student opinion
- Allows you to create benchmarks of where you are compared with past performance

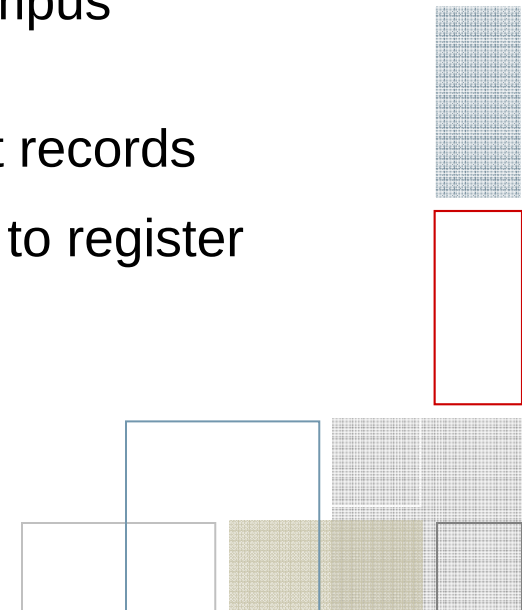
Multi-channel

- Collecting across multiple channels increases response rates

> Ways data collection can be used in enrollment management

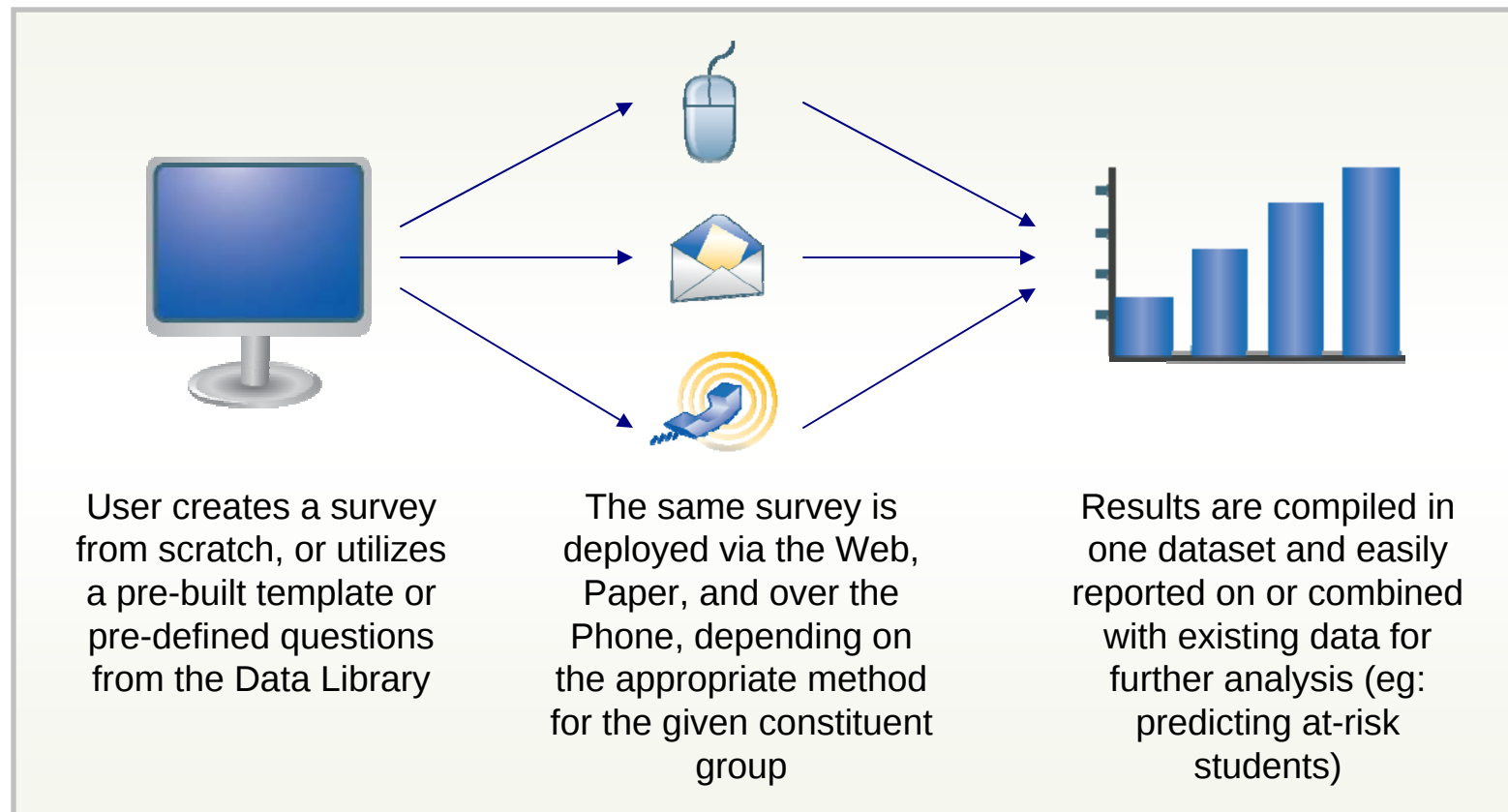


- Collect survey data from prospects who have just visited your campus
- Easily bring in feedback from alumni interviews with prospective students
- Gather current student opinions on your admissions process
- Survey students at critical times, such as assessing their satisfaction and engagement during the first 90 days
- Assess student satisfaction with academic and campus programming
- Complete information missing from current student records
- Collect information on the courses students intend to register for the coming semester
- Etc.



> Idea 1: Ongoing, multi-channel data collection

- How the technology works:



> Idea 1: Ongoing, multi-channel data collection

SPSS

The screenshot displays the 'HE_Road_Show - Author' application window. The interface includes a menu bar (File, Edit, View, Insert, Group, Tools, Help), a toolbar with icons for file operations and routing, and a status bar at the bottom showing 'Context: Question' and 'Language: English (United States)'.

The main workspace is divided into three panes:

- Left Pane (Routing Tree):** A hierarchical list of routing items. The 'NewRouting' item is selected and expanded, showing a tree structure: Intro, Services, IfNo, Hear, GoToServicesWhat, WhyNot, GoToAddServices, ServicesWhat, ServicesInfo, AddServices, IfGoTo, Recommend, Promote, Page, and Thank.
- Center Pane (Design View):** Displays the visual layout of the 'NewRouting' form. It consists of three stacked sections:
 - Intro:** A section with an information icon and the text: 'The Academic Center is assessing student perceptions of the services we provide.'
 - Services:** A section with a question icon and the text: 'Have you used the Services provided by the Academic Center?'. Below the text is a table for responses:

Responses
Yes
No
 - IfNo:** A section with a decision icon and the text: '<Enter optional routing description here>'. Below the text is a logic rule: `Services.ContainsAny({No})`.
- Right Pane (Properties):** A panel titled 'Routing' showing configuration options for the selected 'NewRouting' item:
 - Name:** NewRouting
 - Layout Template:** AC_Template.htm
 - Interviewing Mode:** A list of checkboxes for 'Paper', 'Phone', 'Unplugged', and 'Web'. The 'Web' option is checked.

> Idea 1: Ongoing, multi-channel data collection

SPSS

HE_Road_Show - Author

File Edit View

Interview Preview

SPSS

Please enter your first name:

James

Previous Next Stop 20%

Web Phone

Close

Context: Question

Language: English (United States)

> Idea 1: Ongoing, multi-channel data collection

SPSS

SPSS InterviewBuilder - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Forward Stop Home Search Favorites Refresh Print Mail Stop

Address <http://192.168.131.128/SPSSMR/InterviewBuilder/Main.aspx?hash=ApplicationUtils> Go Links

Search web...

Dimensions Overview Edit Advanced Presentation Export/Analysis

Project: HE_Road_Show
User: admin
Site: Site

Display options Full question Apply

☒ Status
☒ Race
☒ Class
☒ Housing
☒ Transfer
☒ AddServices
☒ WhyNot
☒ Hear
☒ Services
☒ ServicesW..
☒ Recommend
☒ Intro
☒ Promote
☒ Thank
☒ Servicesl..

WhyNot

Why have you not used the services of the Academic Center?

☐ I have heard of the Academic Center and it's services, but I have not made the time.

☐ I have heard of the Academic Center, but I am not interested in it's services.

☐ I have heard of the Academic Center, but I do not know about the services provided.

☐ I have heard about the services provided by the Academic Center, but I am not informed of how to use them services.

☐ I have heard of the Academic Center, but I am embarrassed to seek help.

☐ I have not heard of the Academic Center nor the services offered.

☐ I am in no need of the services provided by the Academic Center

Group on Page

Hear

How did you hear about the services provided by the Academic Center?

☐ Faculty

☐ Admission Receptions/Open Houses

☐ Signage and flyers

☐ Presentations in classes or the residence hall

☐ Other students

☐ Website

Group on Page

Services

Have you used the Services provided by the Academic Center?

Done Internet

> Idea 1: Ongoing, multi-channel data collection

SPSS

The screenshot displays the SPSS Reporter application window, titled "Untitled* - Reporter". The interface includes a menu bar (File, Edit, View, Tables, Variables, Filter, Tools, Help) and a toolbar with various icons. The main workspace is divided into three panes: "Tables List", "Variable Folders", and a central "Design" pane.

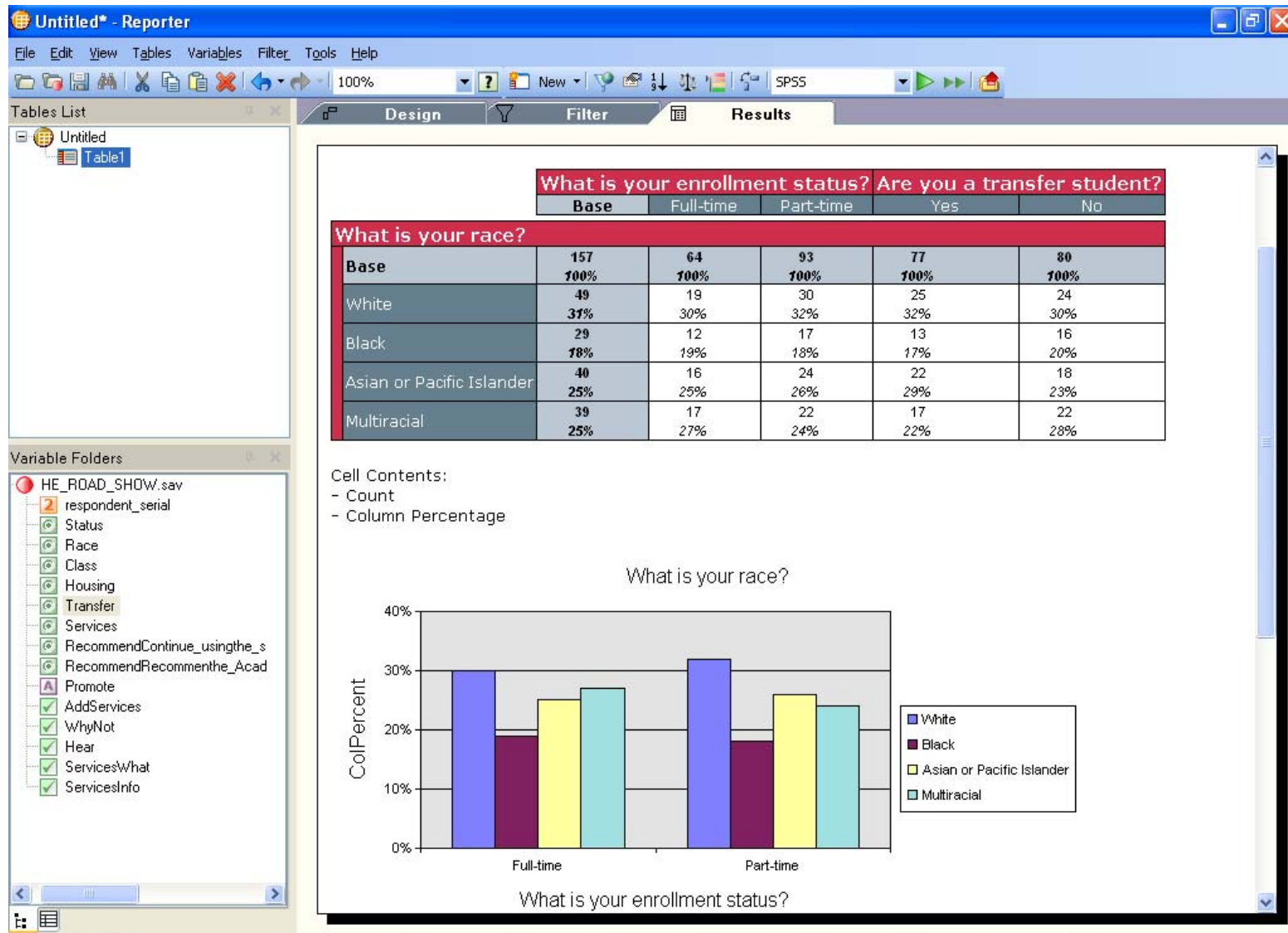
Tables List: Shows a tree view with "Untitled" and "Table1".

Variable Folders: Lists variables from the "HE_ROAD_SHOW.sav" dataset, including "respondent_serial", "Status", "Race", "Class", "Housing", "Transfer", "Services", "RecommendContinue_usingth", "RecommendRecommenethe_A", "Promote", "AddServices", "WhyNot", and "Hear".

Design Pane: Displays the "Table Description" for "Table1". The table structure is visualized as follows:

- Top:** A container box containing:
 - A row with "Status" and "Transfer" variables, followed by an "Add" button icon.
 - A "Nest" box containing an "Add" button icon.
- Side:** A container box containing:
 - A "Race" variable followed by a "Nest" box.
 - An "Add" button icon.

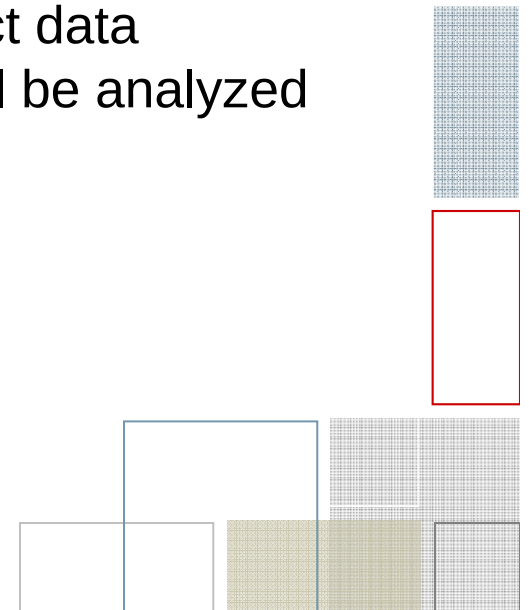
> Idea 1: Ongoing, multi-channel data collection



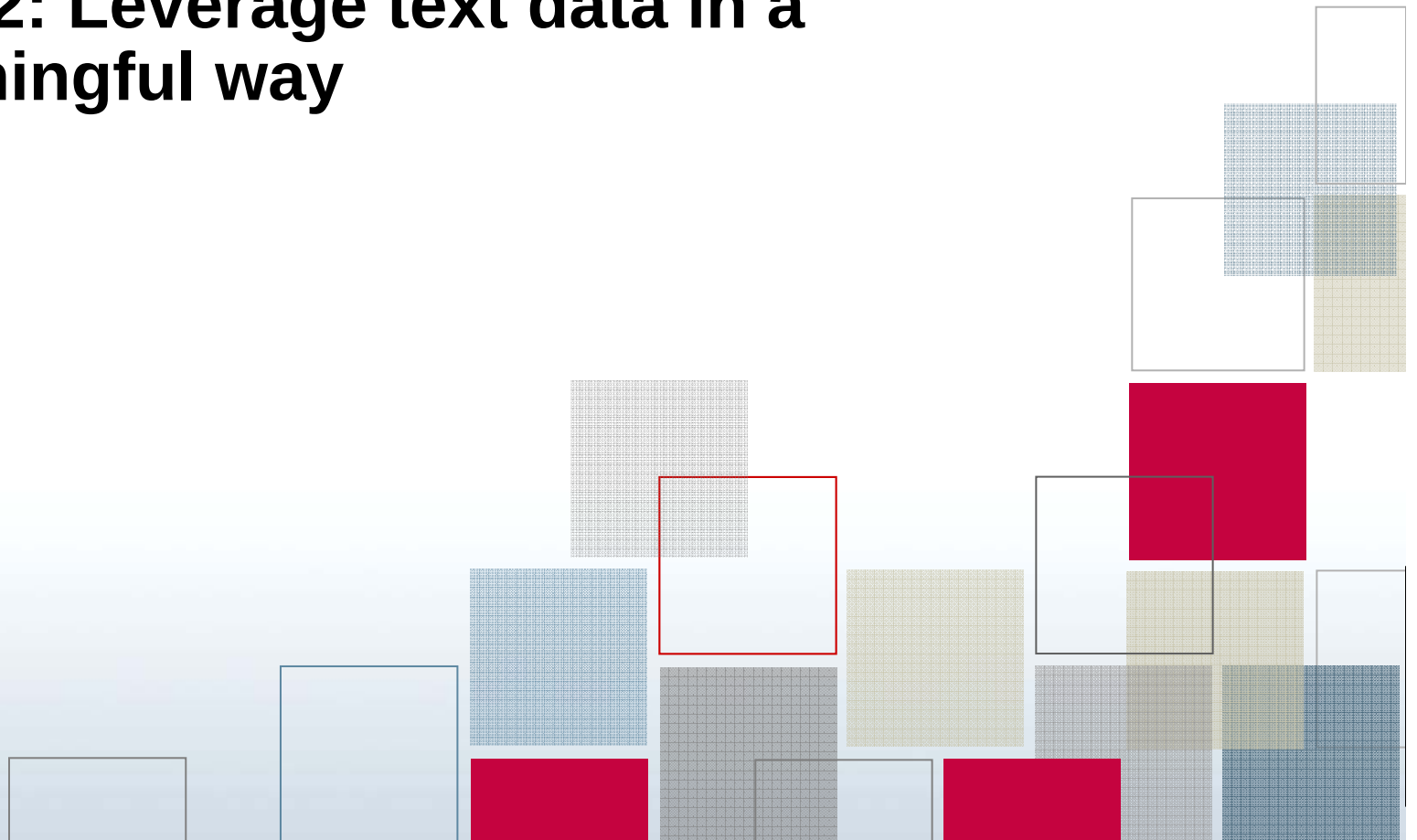
> Idea 1: Ongoing, multi-channel data collection



- Tips for getting started:
 - Create a data collection plan and stick to it:
 - Outline Goals
 - Inventory what data you already have
 - Make sure your questions and survey are well-designed
 - Make sure you are using an appropriate channel for your target audience
 - Reduce and reuse!
 - Take advantage of natural interactions to collect data
 - Decide who/what/where/when/how the data will be analyzed and used in decision making



➤ **Idea 2: Leverage text data in a meaningful way**

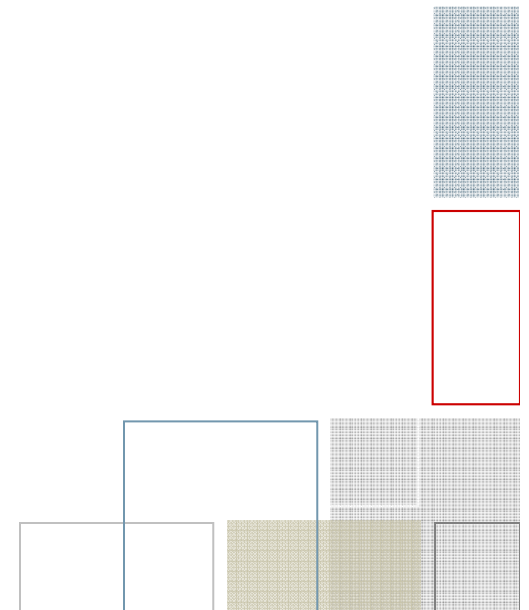


> Idea 2: Leverage Text Data in a Meaningful Way

■ Benefits:

Text Mining

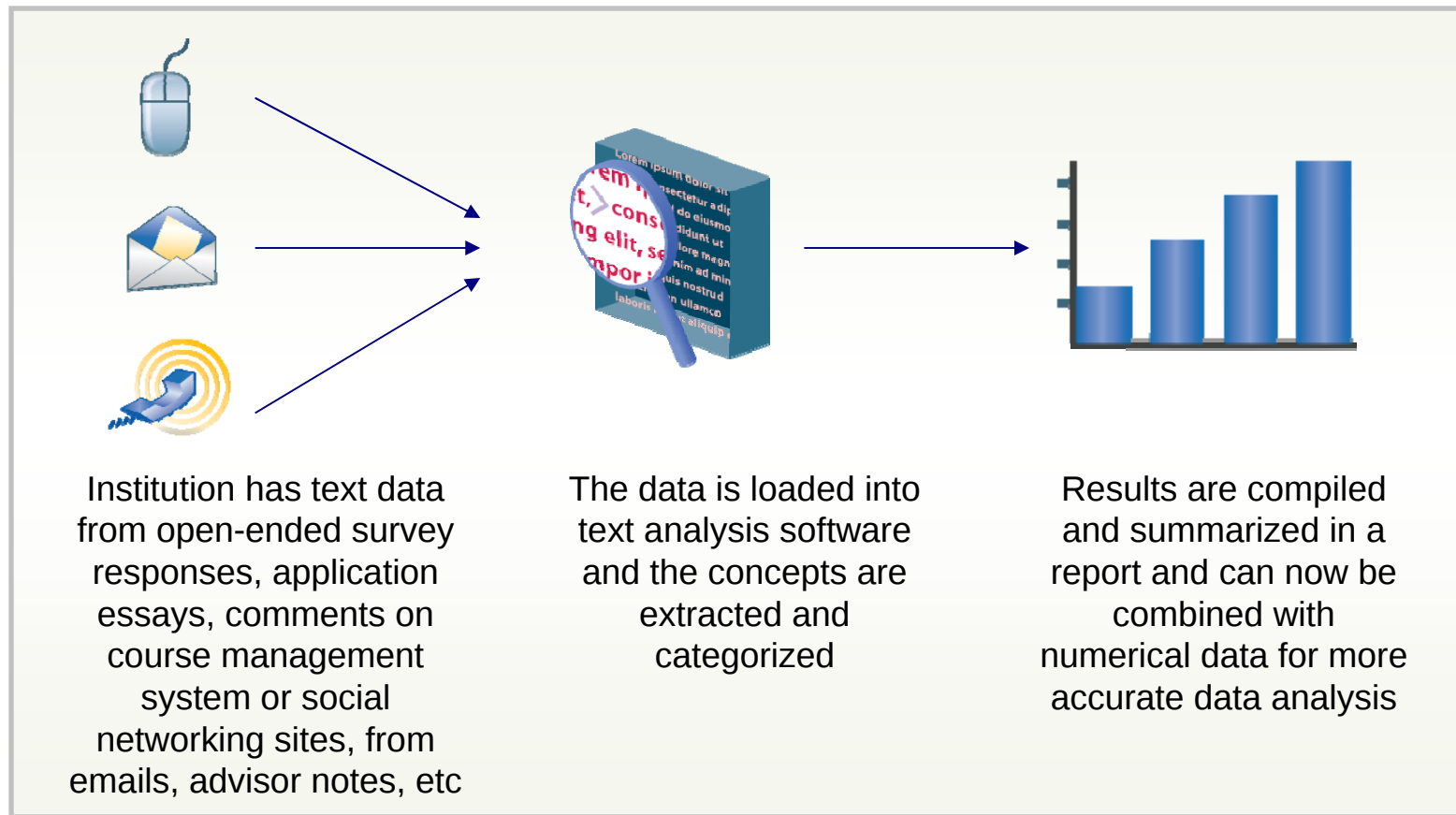
- 80% of all data within an institution is unstructured (text) data
- Leverage comments from application essays, social networking portals, course management systems, emails, recruiter or advisor notes, etc.
- Text provides more rich, accurate view of applicants' and students' opinions...in their own words
- Attitude is the best predictor of action
- Drastically reduce staff time spent reading and coding open-ended responses
- Increase the accuracy of predictive models– by up to 40%



> Idea 2: Leverage Text Data in a Meaningful Way

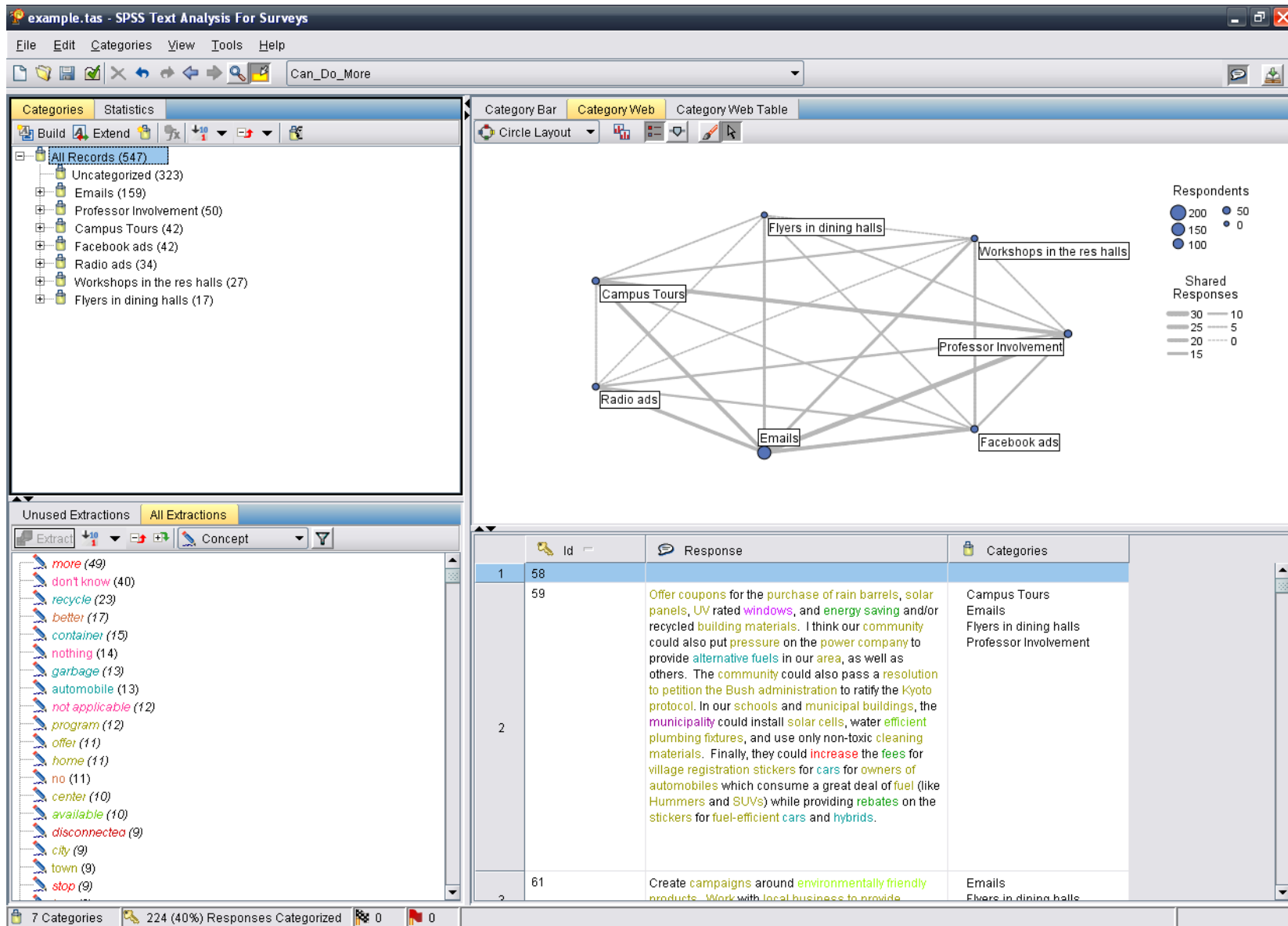
SPSS

- How the technology works:



> Idea 2: Leverage Text Data in a Meaningful Way

SPSS



> Idea 2: Leverage Text Data in a Meaningful Way

SPSS

Project 1 - SPSS Text Analysis For Surveys

File Edit Categories View Tools Help

Q1: If too little, what type of additional communication would have been most helpful?

Categories Statistics

Build Extend

educational institution (159)
letters (86)
enrollee (83)
information (78)
call (66)
phone calls (58)
programs (46)
applicant (40)
entry (32)
admissions (31)
options (25)
decision (22)
person (20)
pedagog (17)

Unused Extractions All Extractions

Extract Concept

more (115)
college (79)
letters (73)
information (70)
school (60)
no (55)
emails (49)
phone calls (42)
like (41)
would be good (40)
university (36)
students (31)
viewbook (25)

Category Bar Category Web Category Web Table

Color bars by: Enrolled

Display 100% bars

Category	Bar	Selection %	Respondents	Total %
educational ins...		100.0	159	46
enrollee		35.2	56	24
information		30.2	48	22
letters		27.0	43	24
call		16.4	26	19
applicant		15.7	25	11
programs		15.1	24	13
phone calls		12.6	20	16
options		9.4	15	7
pedagog		8.8	14	4
decision		8.2	13	6
entry		8.2	13	9
admissions		7.5	12	9

■ NO ■ YES

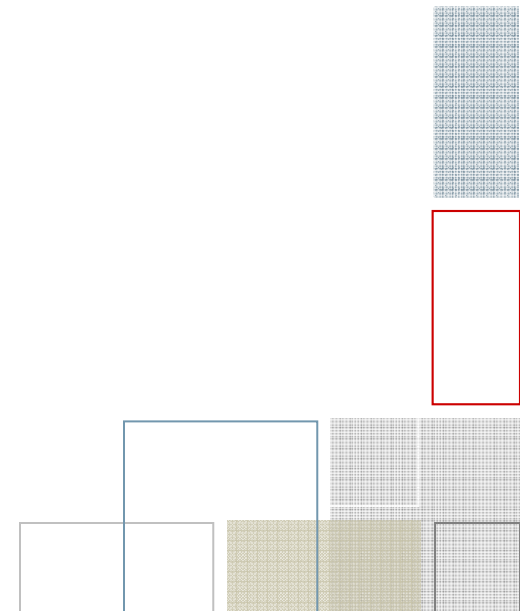
Id	Response	Categories
16	During the Financial Aid Application process, the department lost W-2s / Parent / Student Tax Forms. I visited in June, and asked if my family should resend the information. The gentleman we spoke with (head of financial aid services at THE COLLEGE) said that it would not be a problem and not to worry about it. If they cannot find the information, they will send us a letter re-requesting. I also asked how my financial aid would be affected based on a scholarship I recently received that entitles me to \$2,500 / semester. I was told it would take away from loans, but not grants. However, I did not receive this letter until late in the third week of July. After re-sending the	information letters educational institution enrollee
10		

14 Categories 300 (86%) Responses Categorized 0 0

> Idea 2: Leverage Text Data in a Meaningful Way

SPSS

- Tips for Getting Started
 - Inventory your on-hand text data
 - Determine what further information you'll need and how you'll ask for it
 - Be specific! For example, "What did you like?" is a different question than "What didn't you like?"
 - Consider when and how you will collect this data and where it will be stored



> Idea 3: Use predictive modeling to inform and drive decision making



> Idea 3: Use predictive modeling to inform and drive decision making

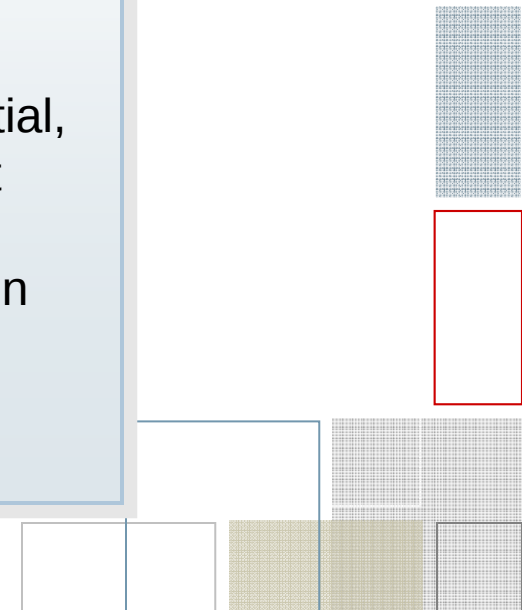
■ Benefits:

For Recruiting...

- Better focus budget, financial aid, and admissions staff resources on prospective students who are most likely to enroll
- Target prospective students in the right way, at the right time, with the right message
- Reduce your recruiting costs by 25-40%

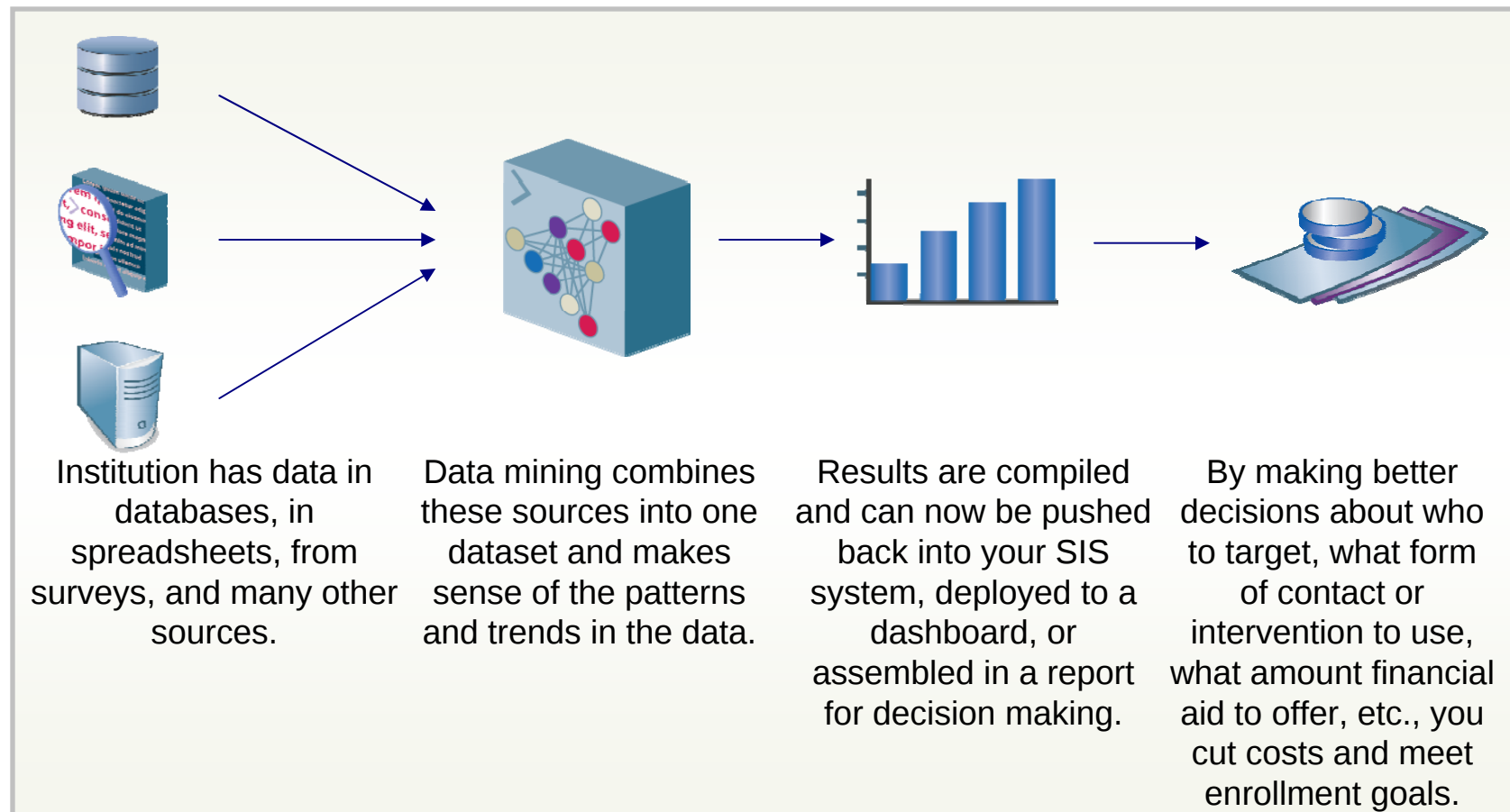
For Retention...

- Proactively identify at-risk students
- Determine and take action to prevent the key triggers of student attrition
- Focus advising, residential, financial aid, and student success resources on keeping at-risk students in school



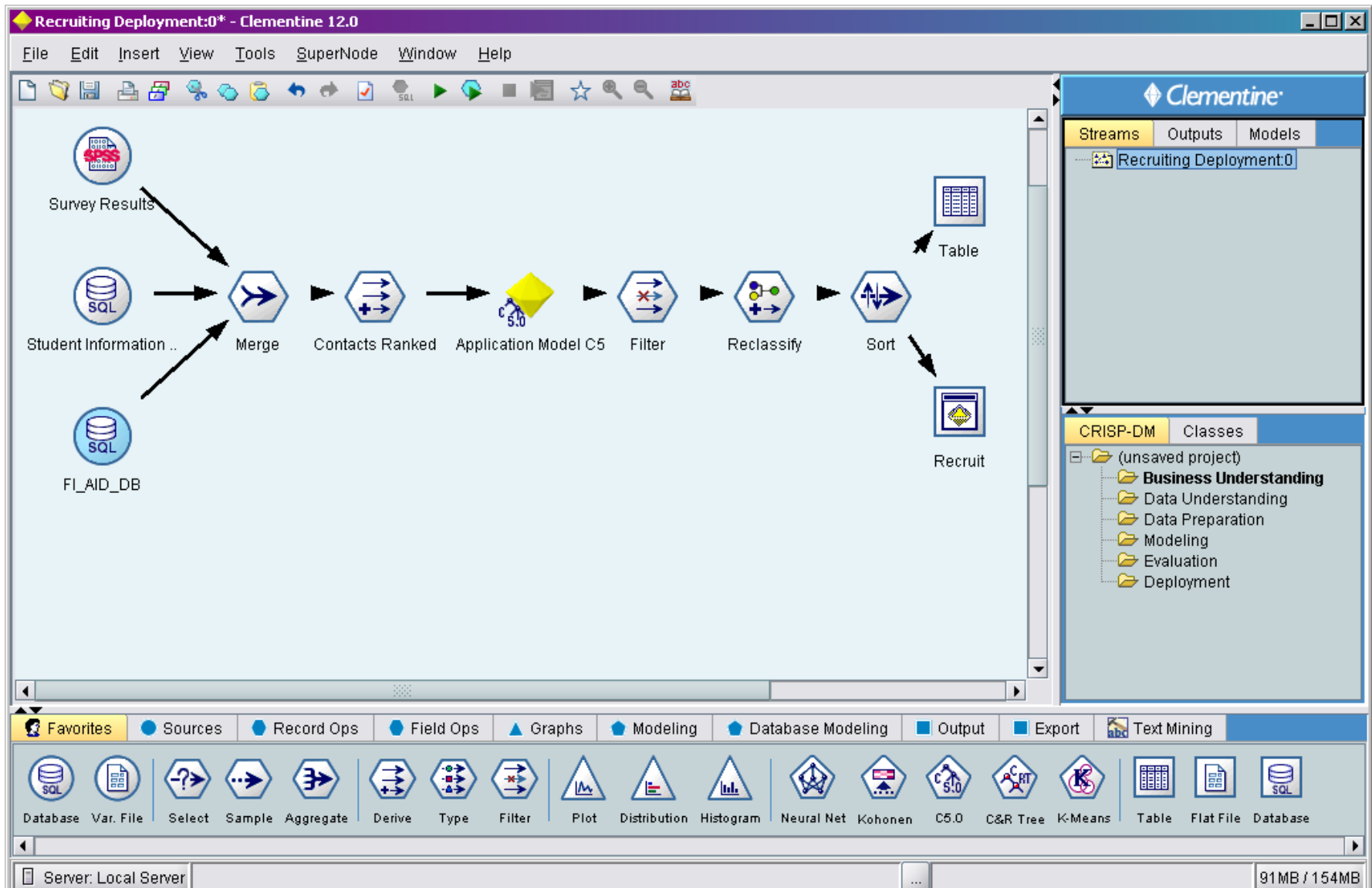
> Idea 3: Use predictive modeling to inform and drive decision making

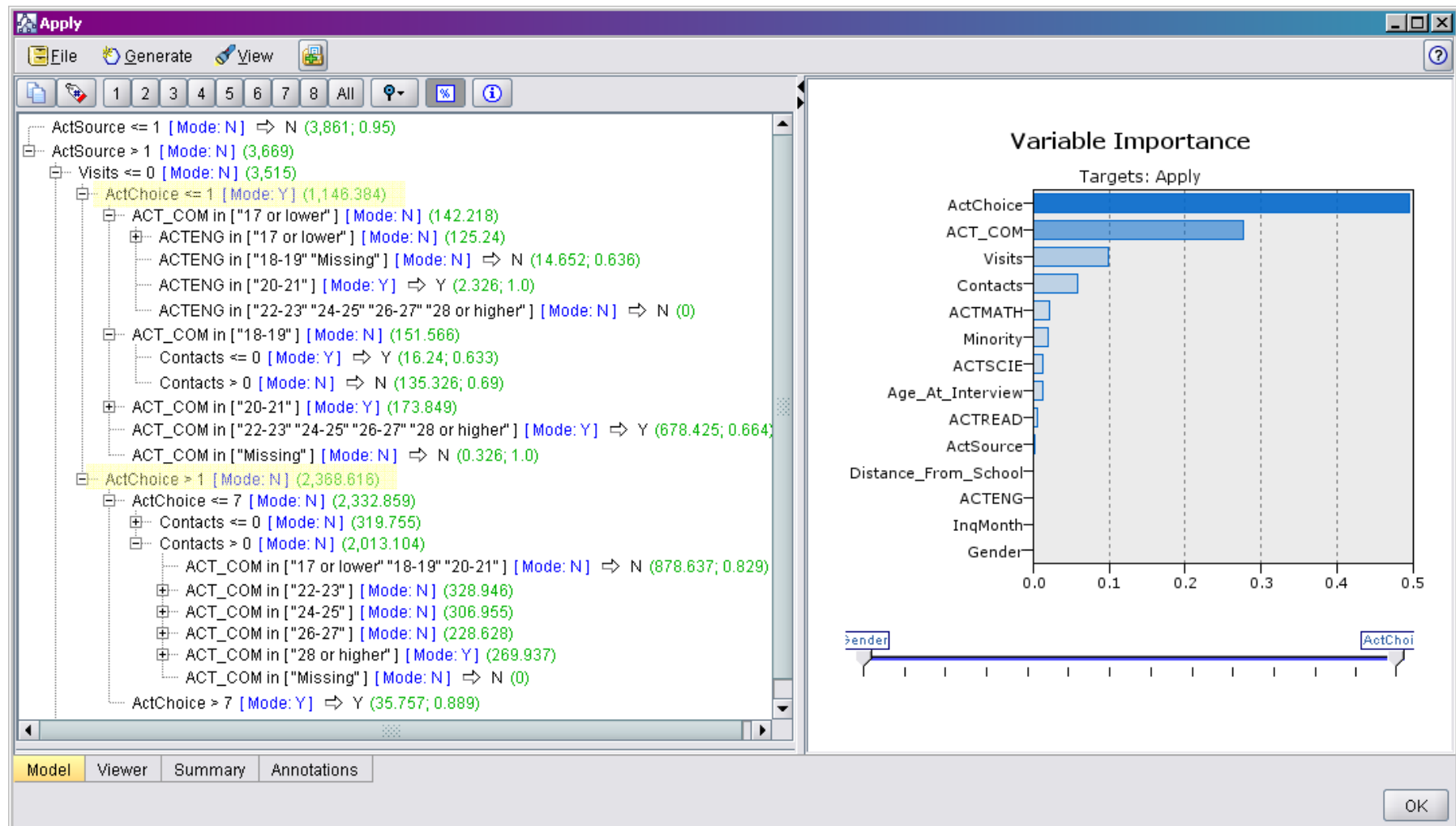
- How the technology works:



> Idea 3: Use predictive modeling to inform and drive decision making

SPSS





> Two Approaches to Modeling

SPSS

Supervised Learning

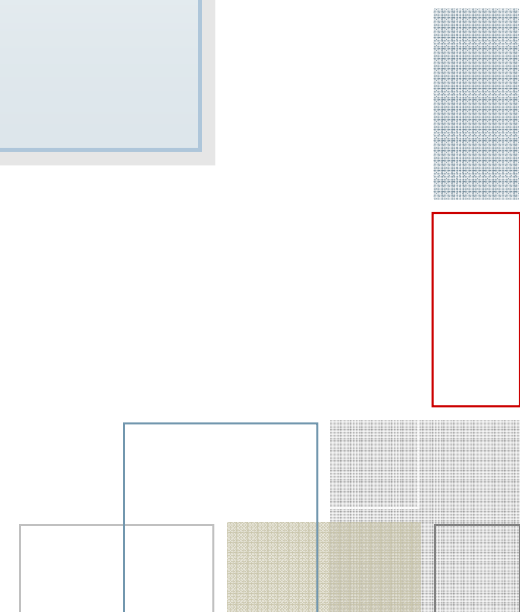
Classification/Decision Trees
Regression Algorithms
Association

Predict outcomes

Unsupervised Learning

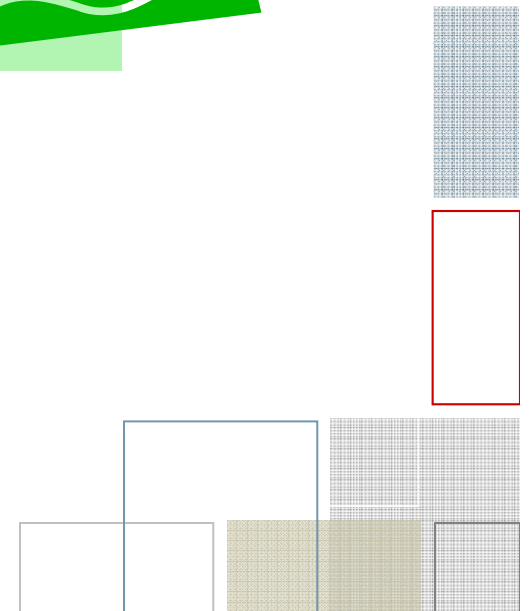
Clustering

Find natural
groupings

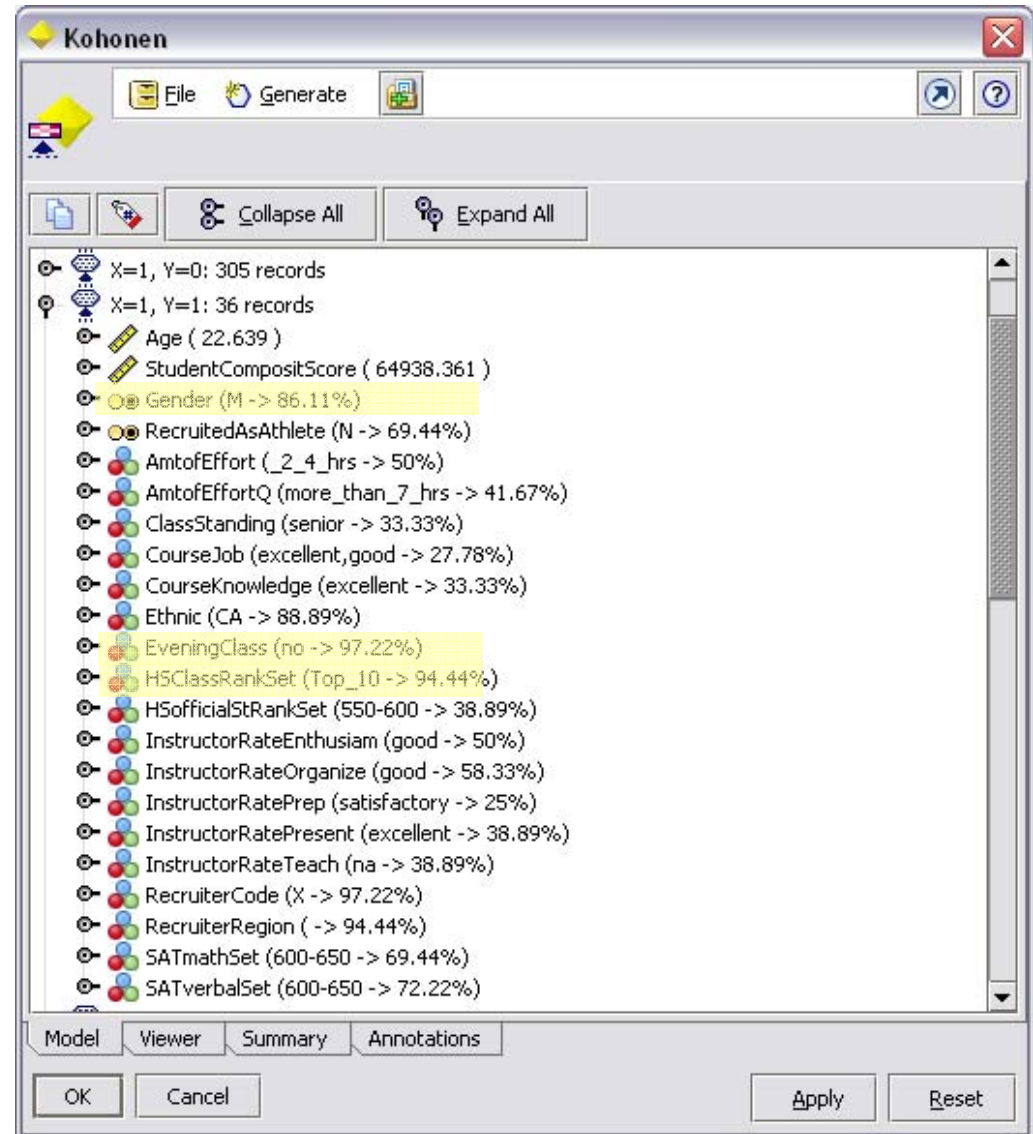
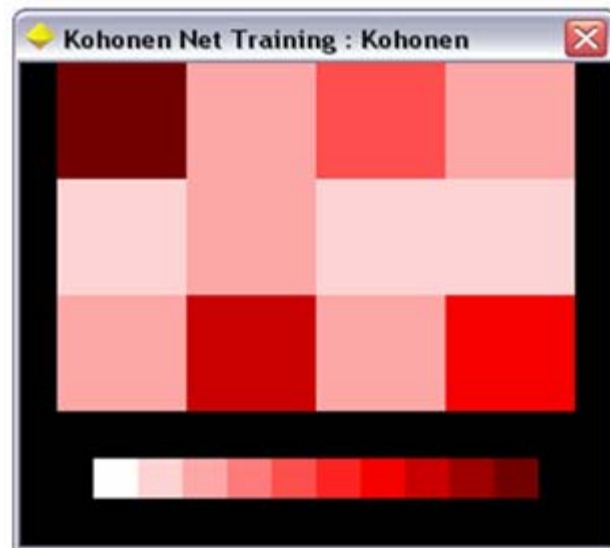


> What is Unsupervised Learning?

- A data mining technique when we do not know the output or outputs
- A set of techniques that are used to group cases together that have similar characteristics
- Can be thought of as finding 'useful' patterns above and beyond noise...or "fishing" for information



> Unsupervised Learning: Clustering (Segmentation)



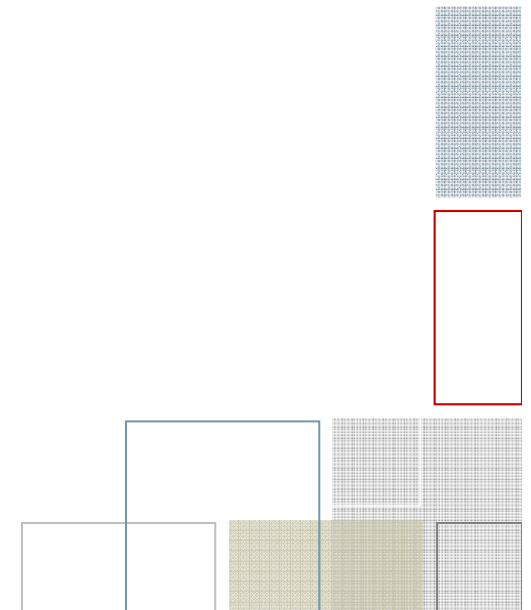
> Unsupervised Learning: Clustering (Segmentation)

Cluster * Persist Crosstabulation

% within Cluster

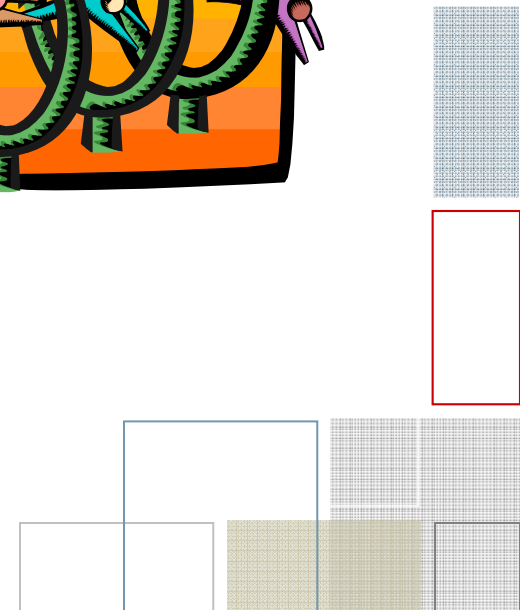
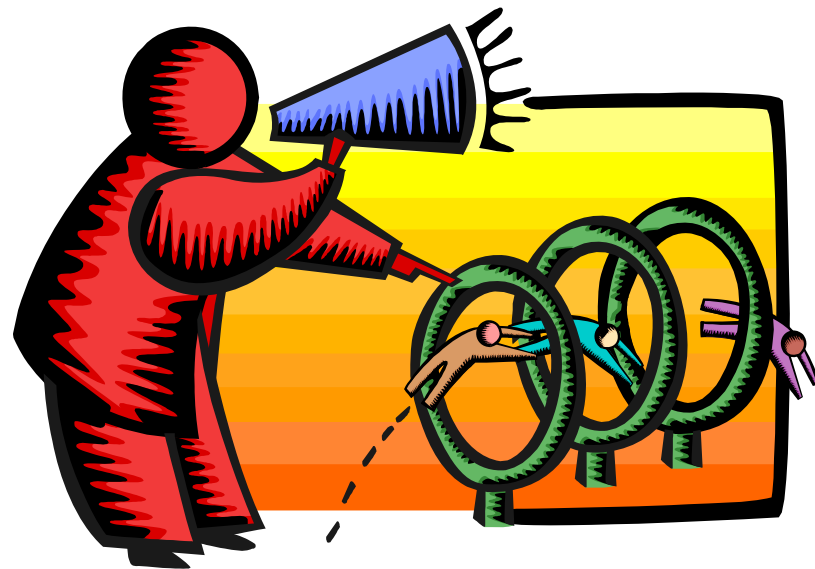
	Persist		Total
	Non-Persist	Persist	
Cluster 1	27.2%	72.8%	100.0%
Total	27.2%	72.8%	100.0%

**27% of students in this cluster,
with this *combination of characteristics*,
did not stay at the institution!**



> What is Supervised Learning?

- A technique when we know the output or outputs
- We will “Supervise” the algorithm and tell it what we want to predict.

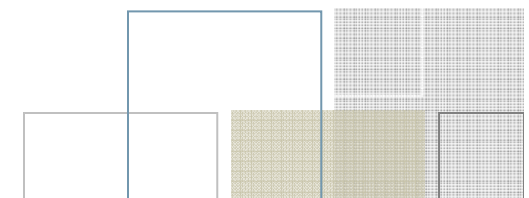


> Supervised Learning: Classification

Inputs

Target

Age	HSClassRankSet	StudentCompositScore	CollegeTestScore	HSClassSizeSet	SATmathSet	SATverbalSet	Gender	StudentStatus
20	default	65643	126	band10	650-700	650-700	M	Graduated
20	Top_10	66464	245	200-300	550-600	500-550	M	Graduated
21	150-200	60369	0	500-600	550-600	550-600	F	Attrited
21	50-100	61266	288	200-300	650-700	600-650	M	Graduated
20	Top_10	72393	47	200-300	700-750	550-600	M	Graduated
21	50-100	60094	213	200-300	550-600	500-550	M	Graduated
20	10-25	69216	0	300-400	700-750	550-600	M	Attrited
19	10-25	69924	508	400-500	Above750	650-700	M	Graduated
20	default	62686	325	band10	600-650	650-700	M	Graduated
22	Top_10	61519	381	LessThan100	600-650	600-650	M	Graduated
21	Top_10	60563	835	400-500	500-550	500-550	M	Graduated
20	default	67530	511	band10	700-750	600-650	M	Graduated
20	Top_10	67064	148	200-300	650-700	Above 750	F	Graduated
20	25-50	61752	611	200-300	600-650	600-650	M	Graduated
19	10-25	66119	938	100-200	600-650	650-700	M	Graduated
21	25-50	63689	111	300-400	600-650	600-650	M	Graduated
23	10-25	60007	0	100-200	550-600	550-600	F	Attrited
20	Top_10	70092	\$null\$	100-200	700-750	650-700	M	Attrited



> Supervised Learning: Classification

SPSS



From very small or very large HS class

+

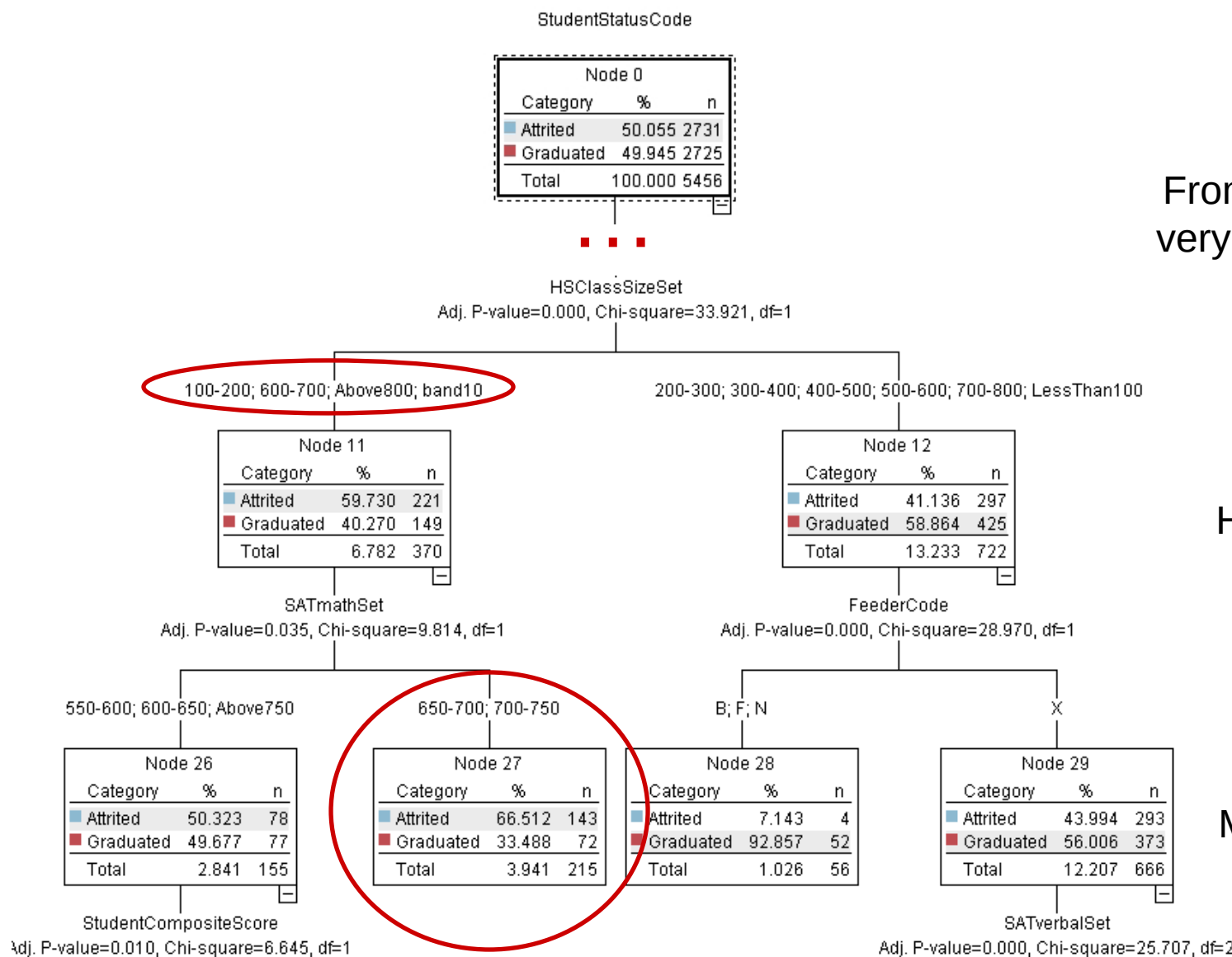


High score on SAT Math

=

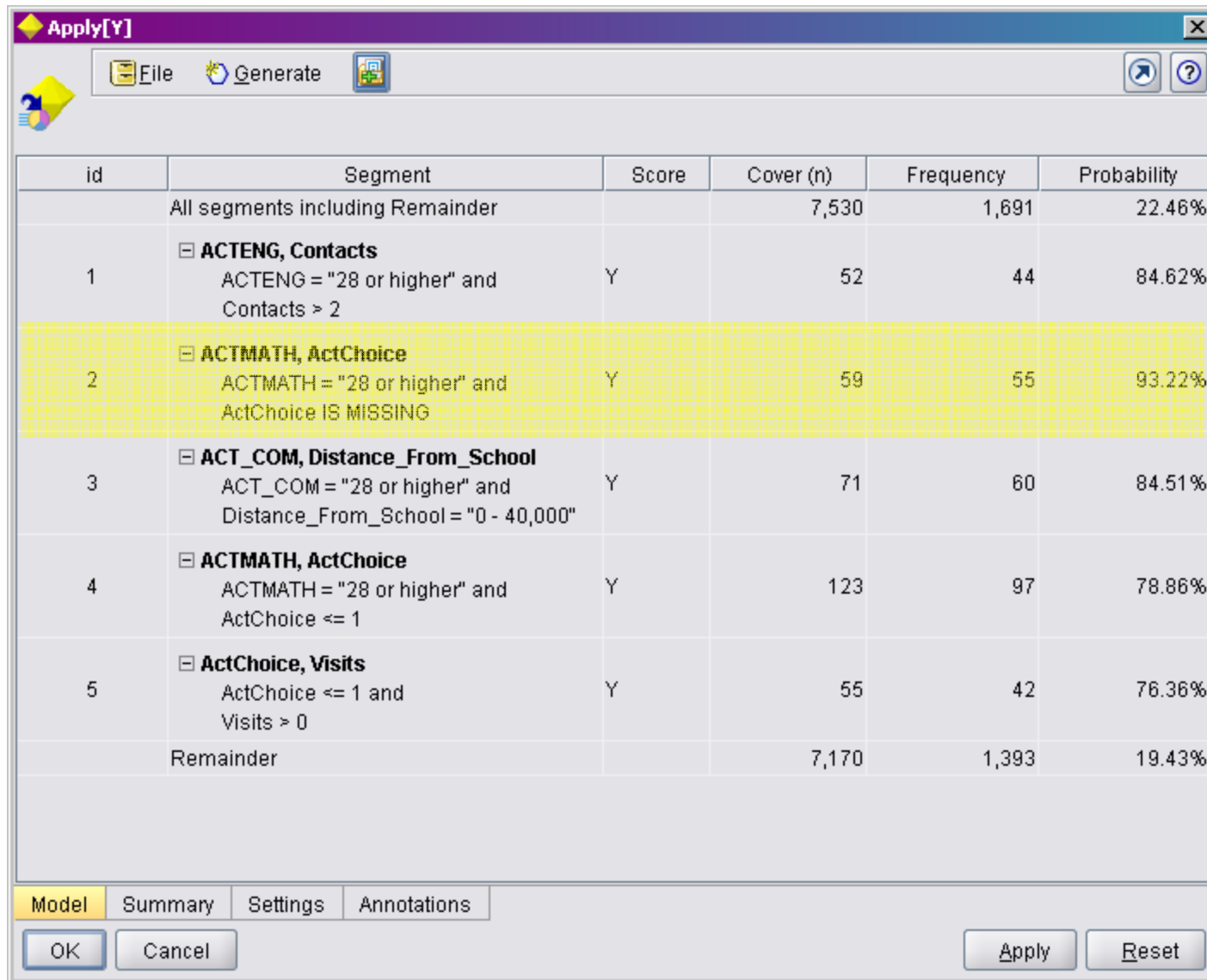


More likely to leave



> Supervised Learning: Classification

SPSS



The image shows the 'Apply[Y]' dialog box in SPSS. It contains a table with columns: id, Segment, Score, Cover (n), Frequency, and Probability. The table lists several segments, with segment 2 highlighted in yellow. Below the table are tabs for Model, Summary, Settings, and Annotations, and buttons for OK, Cancel, Apply, and Reset.

id	Segment	Score	Cover (n)	Frequency	Probability
	All segments including Remainder		7,530	1,691	22.46%
1	ACTENG, Contacts ACTENG = "28 or higher" and Contacts > 2	Y	52	44	84.62%
2	ACTMATH, ActChoice ACTMATH = "28 or higher" and ActChoice IS MISSING	Y	59	55	93.22%
3	ACT_COM, Distance_From_School ACT_COM = "28 or higher" and Distance_From_School = "0 - 40,000"	Y	71	60	84.51%
4	ACTMATH, ActChoice ACTMATH = "28 or higher" and ActChoice <= 1	Y	123	97	78.86%
5	ActChoice, Visits ActChoice <= 1 and Visits > 0	Y	55	42	76.36%
	Remainder		7,170	1,393	19.43%



ACT Math Score
of 28 or higher

+

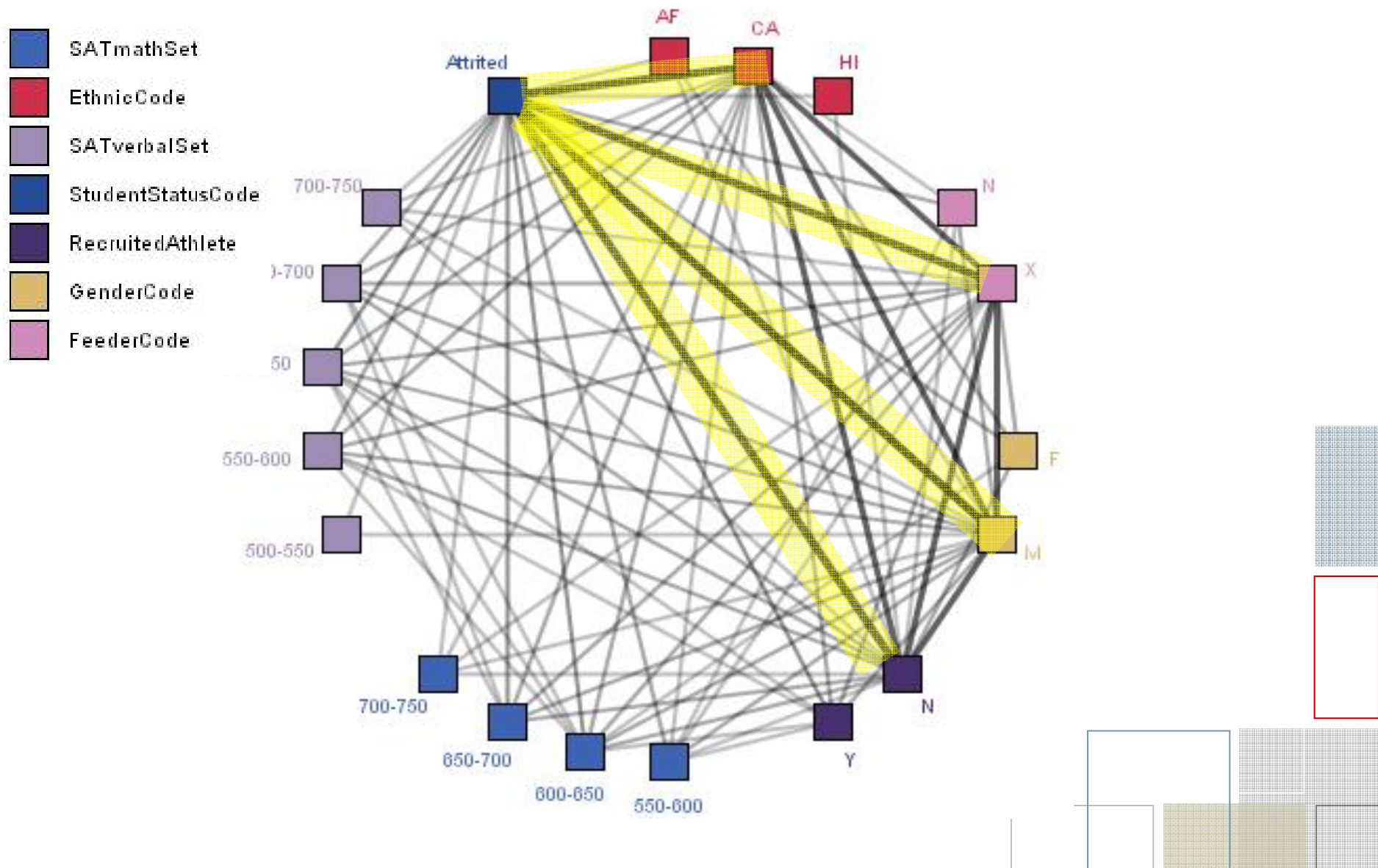


Did not select a
school to send
ACT scores to

=



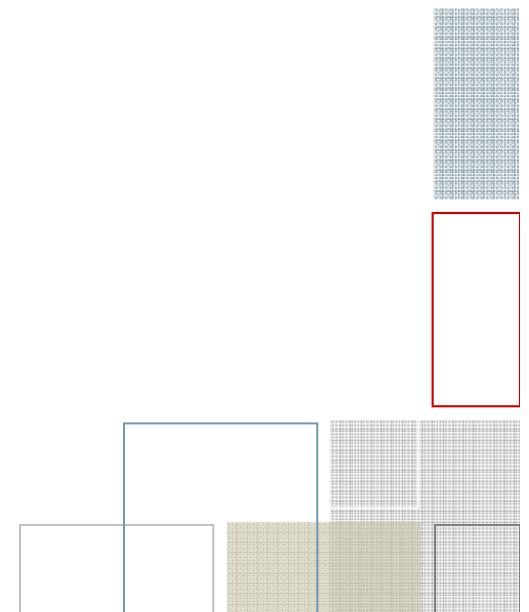
MOST
likely to enroll



> Idea 3: Use predictive modeling to inform and drive decision making

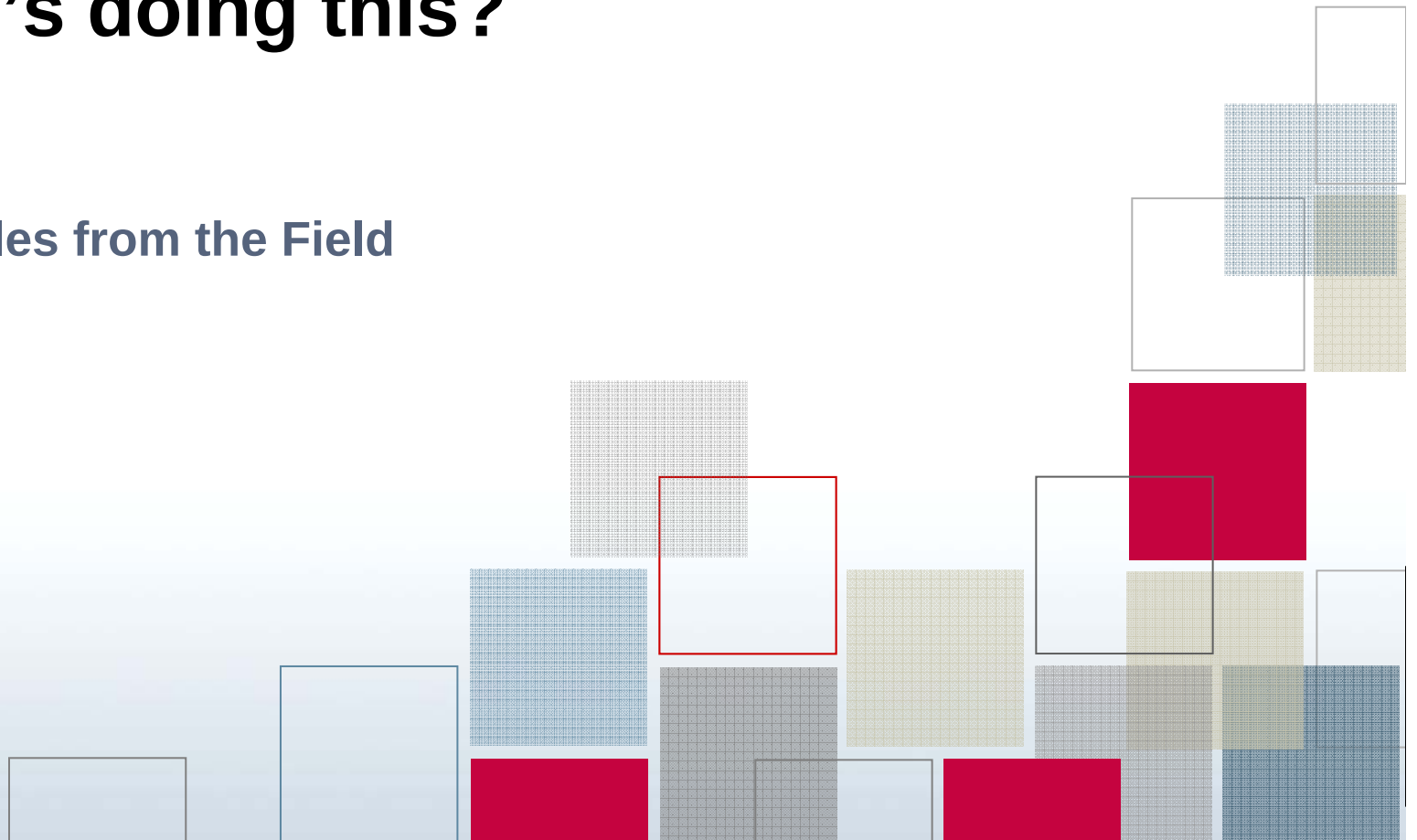
SPSS

- Tips for Getting Started:
 - What data do you have? Do you have enough?
 - Is it the right kind?
 - What do you want to know? Can you answer the question you're asking?
 - Is it intact?
 - How many records are complete enough to include in a model?
 - Do you need more?
 - Are you collecting feedback that you need?



> Who's doing this?

Examples from the Field



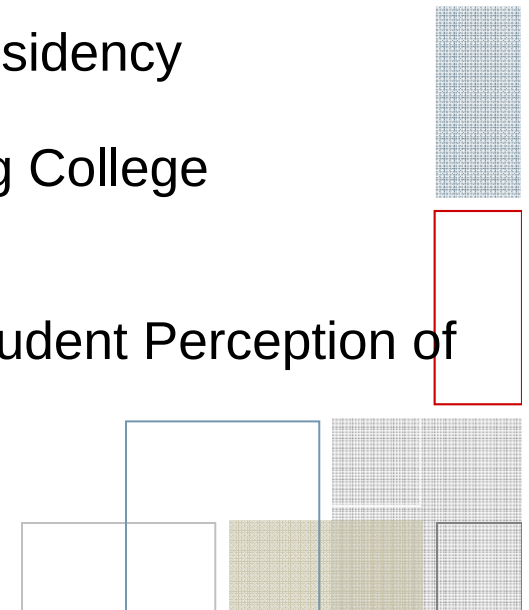
> Who's doing this?

Columbia College Chicago

SPSS



- **Profile:**
 - Arts and Media College in Chicago's South Loop
 - 10,771 Undergraduate Students
 - 728 Graduate Students
- **Situation:**
 - Significant enrollment growth, but only 63% first year retention rate
- **Information used:**
 - Student Demographics / Residency
 - Academic Preparation
 - The Economics of Attending College
 - Parental Support of Goal
 - Student Certainty of Goal
 - Strength of Program and Student Perception of Program Strength

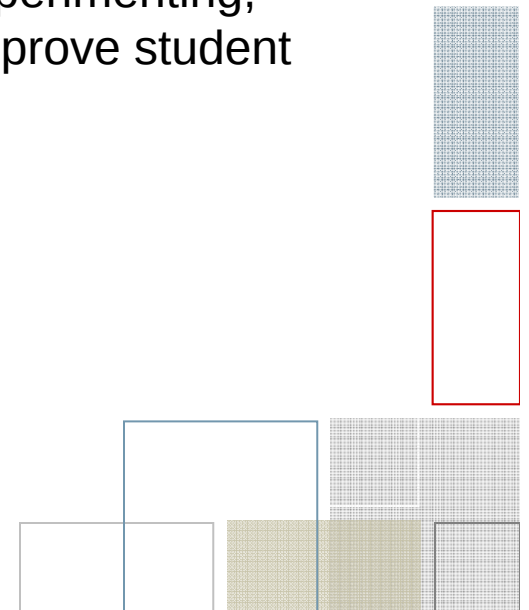


> What kind of results are seen from doing this?

SPSS



- **Drove change at the institution through policy:**
 - Ended late applicant registration
 - Developed proactive advisement pilot
 - Educated faculty on why students leave and how to recognize warning signs
 - Formed a cross-functional enrollment management team
 - Improved data collection
 - Now constantly testing, experimenting, revising, reassessing to improve student retention



> Galveston College plans resource levels and increases student retention

SPSS

- **Profile**

- Community college in Galveston, TX
- 2,400 full-time students
- 8,000 workforce development and continuing education program participants annually

- **Situation**

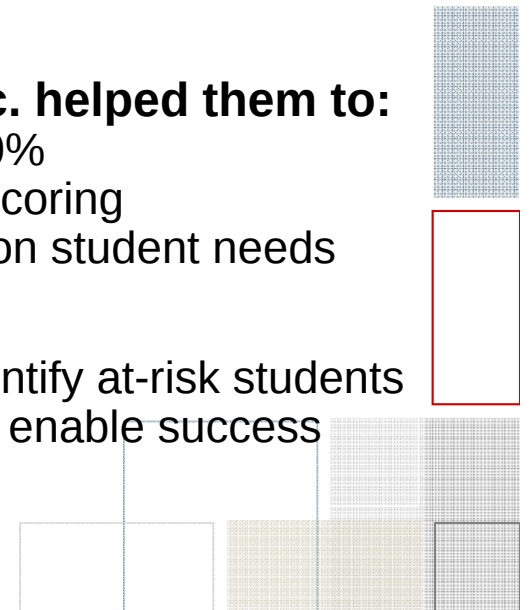
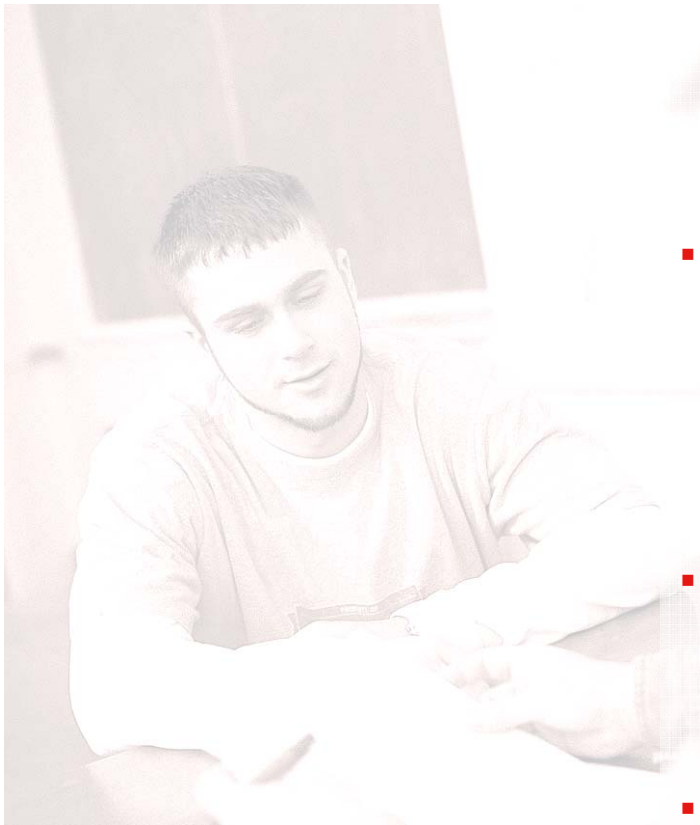
- Were administering a 240-question survey of emotional skills to all student each semester to determine student needs for success
- Process was time-consuming and data-entry was cumbersome

- **Data collection from SPSS Inc. helped them to:**

- Reduce time-to-analysis by 50%
- Improve accuracy of student scoring
- Provide real-time information on student needs

- **They put results to use by:**

- Scores used to proactively identify at-risk students and predict resource needs to enable success and keep students in school



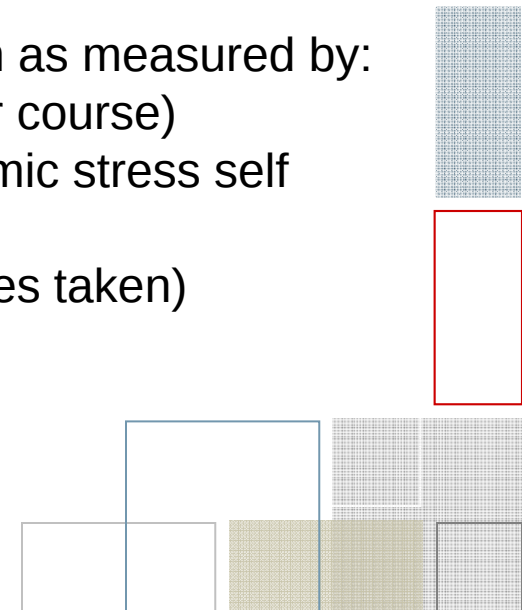
> Who's doing this?

Cabrillo College

SPSS



- **Profile:**
 - Two-year community college in Aptos, California
 - 14,500 Undergraduate Students
- **Situation:**
 - Wanted to determine
 - Which students are likely to return for more classes?
 - What types of courses can be offered to attract more students?
- **Information used:**
 - Level of Educational Aspiration as measured by:
 - Course Units (# of units per course)
 - Course Withdrawal (academic stress self adjustment)
 - Course Volume (# of courses taken)
 - Financial Aid

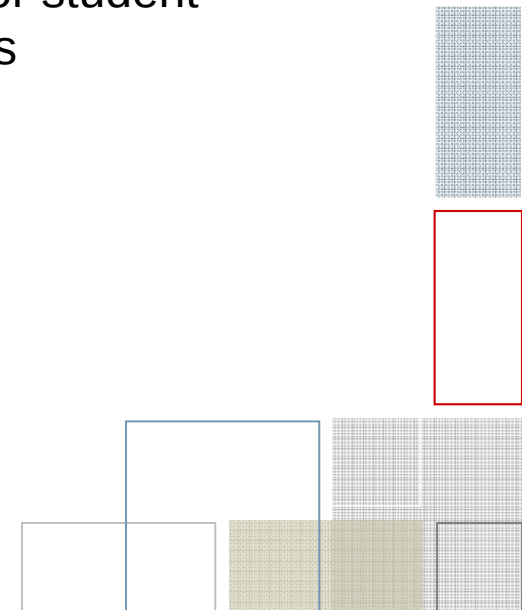


> What kind of results are seen from doing this?

SPSS



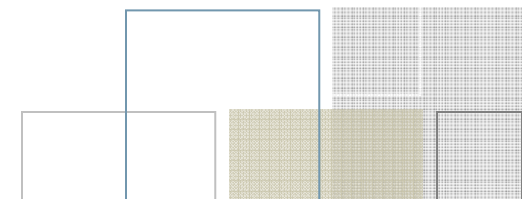
- **Used results of analysis to:**
 - Predict which students were unlikely to return and enable proactive interventions by faculty and administration to provide:
 - Academic Counseling
 - Financial Aid Adjustments
 - Curriculum Assistance
 - Increase state funding by approximately \$750,000 with every 1% increase in FTE
 - Offer more relevant courses for student body at more convenient times
 - Reduce marketing costs



> Enroll: Return on Investment

SPSS

	Avg. Spent on Recruiting per Enrolled Student	Average Size of Incoming Class	Predictive Analytics can reduce marketing costs by:	An average school could save (per year):
2-Year	\$121	969	25-40%	\$29-47K
4-Year Public	\$398	1943	25-40%	\$193-309K
4-Year Private	\$1941	433	25-40%	\$210-336K



> Experience: Return on Investment

	Avg. Incoming Class Size	Average Tuition:	Percentage of Students who Receive Institutional Grants	Avg. Amount Given in Financial Aid per Student	Avg. Retention Rate (Year 1 to Year 2)	Increasing retention by just 1% could save a school:
2-Year	969	\$2361	8%	\$1,200	51.4%	\$21,947
4-Year Public	1943	\$16,640	21%	\$2,900	67.6%	\$934,447
4-Year Private	433	\$23,712	50%	\$7,100	70.2%	\$261,904

> Why SPSS Inc.? Return on Investment

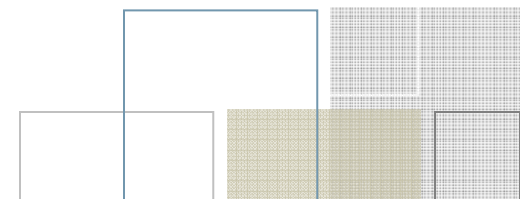
SPSS

Nucleus Research: The Real ROI from SPSS

- 94% of customers achieved a positive ROI, with an average payback period of 10.7 months
- Key benefits achieved include reduced costs, increased productivity, improved customer & employee satisfaction, and greater visibility into operations
- 81% of projects deployed on time, 75% on or under budget

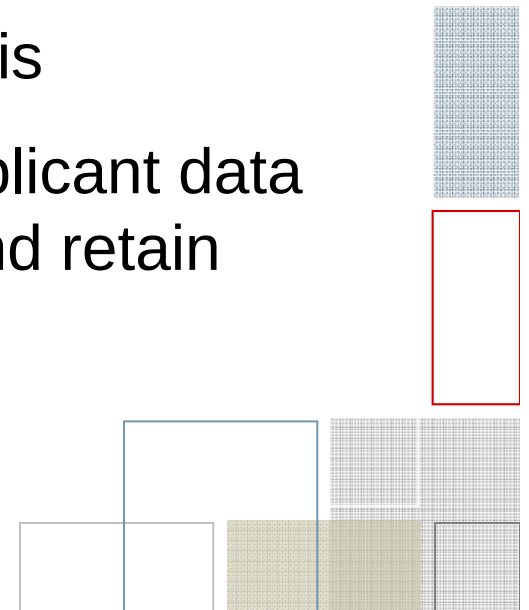
“This is one of the **highest ROI scores Nucleus has ever seen in its Real ROI series of research reports.”**

*Rebecca Wettemann, Vice President of Research,
Nucleus Research*



> In summary...

- Predictive Analytics is spreading but is still not being used to its full extent in recruiting and retention
- 3 Key Ideas for Leveraging Predictive Analytics in Enrollment Management:
 - Ongoing, multi-channel surveys
 - Leverage text in a meaningful way
 - Develop predictive models to drive decision making
- A number of institutions are already doing this
- Capture, predict, and act on student and applicant data to cut costs and improve ability to acquire and retain students



> To learn more...

SPSS

Data Mining to Drive Institutional and Student Success

On Demand

Presenter: Jimmy Jung
Director of Enrollment Planning and
Research,
Baruch College, CUNY

Predictive Analytics in Enrollment Management

April 23, 2009, 1:00 p.m. CT

Presenter: Elena Bubnova
Director of Institutional Research,
Truckee Meadows Community
College

Learn more and register at: www.spss.com/events

> Questions?

SPSS

Sarah Tomashek
Marketing Manager, Higher Education
SPSS Inc.
P. 800.543.2185 extension 3210
e-mail: stomashek@spss.com
website: www.spss.com

