

Enrollment Forecasting in Uncertain Times: Informed Decision Making at Your Fingertips

Scott Busche

University of Northern Iowa

Topics

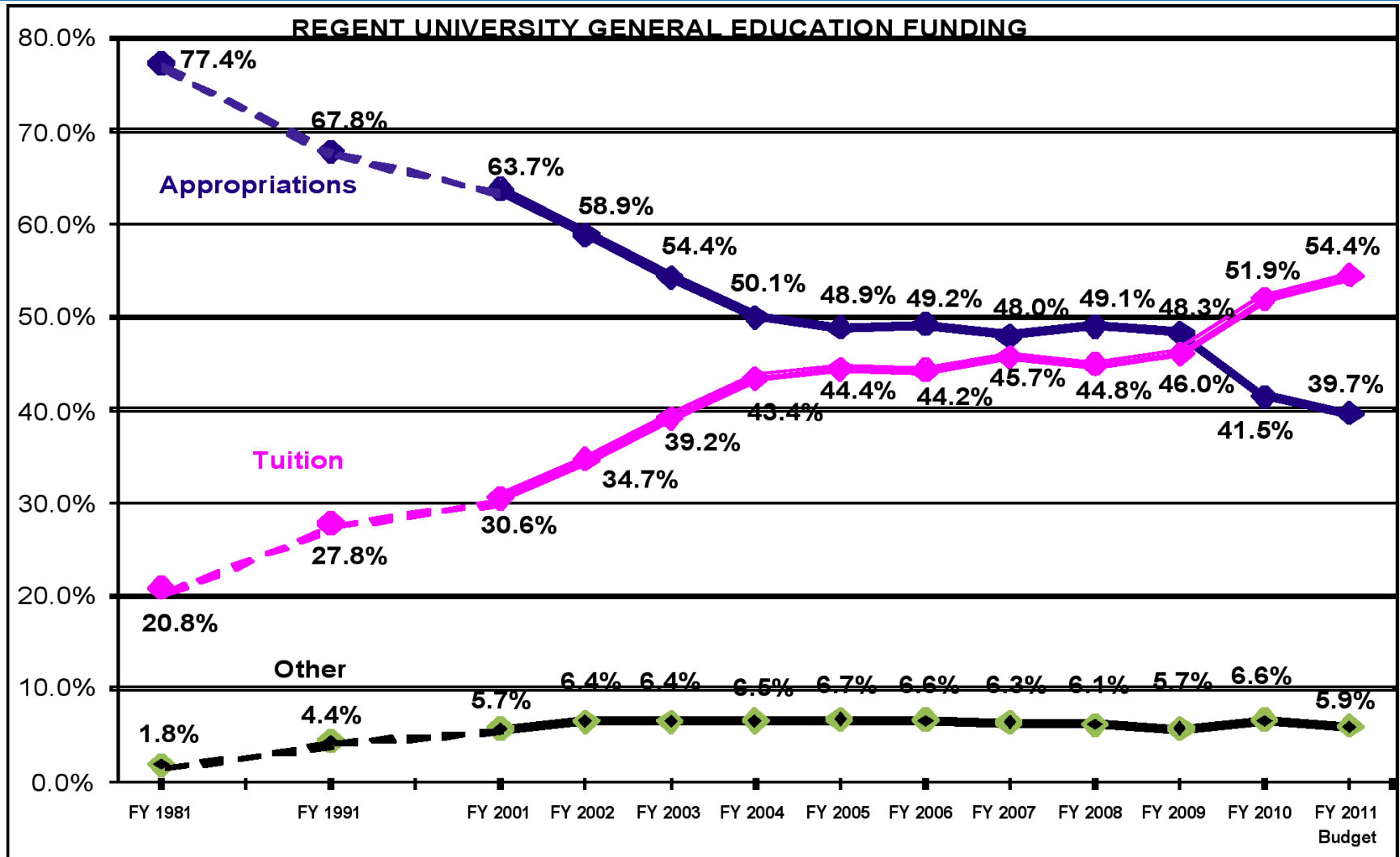
- Importance of Forecasting
- Challenges of Forecasting
- Forecasting Models
- Implementing
- Questions

*Numbers have been changed for this presentation

Importance

- Information is Power
- Planning
- KPIs
- Budgeting

Iowa Regent Funding



Source: <http://www.regents.iowa.gov/annualreport/2010/our-strengths/budget-response/index.html>

Why Forecast?

- Information is power
- Planning
- KPIs
- Budgeting

Challenges

Modeling

- Type
- Driver
- What to Model

Planned Changes

- New Marketing Strategy
- New Admission Policy
- New Application Format

Uncontrollable Changes

- The Economy
- Human Behavior
- NCAA Tournament

Unplanned Changes

- New SIS
- Tuition Increases

Challenges

- Modeling
- Planned Changes
- Uncontrollable Changes
- Unplanned Changes

Models

Spreadsheet

year	New Uncls	% Rtn Un	%Fr/Fr	%Fr/So	%So/Jr	%Jr/Sr	%Sr/Sr	%Gr/Gr	New Gr
act 2003	100	0.525	0.169	0.707	1.096	0.837	0.298	0.787	373
act 2004	97	0.430	0.189	0.720	1.099	0.849	0.293	0.731	385
act 2005	85	0.749	0.176	0.736	1.139	0.817	0.294	0.718	410
act 2006	83	0.663	0.203	0.717	1.093	0.758	0.322	0.751	386
act 2007	93	0.752	0.207	0.706	1.163	0.781	0.333	0.752	427
act 2008	68	0.615	0.195	0.694	1.114	0.808	0.303	0.912	403
act 2009	67	0.772	0.174	0.712	1.115	0.828	0.333	0.721	445
act 2010	60	0.724	0.166	0.730	1.076	0.798	0.327	0.781	412
est 2011	70	0.704	0.178	0.712	1.102	0.811	0.321	0.805	450

Spreadsheet

year	New Fresh	Proj Fr	Proj So	Proj Jr	Proj Sr	Proj Un	Proj Gr	Proj UnGr	Tot Enr
act 2003	1785	2278	2085	3195	3960	256	1667	11774	13441
act 2004	1700	2199	1957	2921	3936	207	1604	11220	12824
act 2005	1737	2189	2004	2928	3591	240	1561	10952	12513
act 2006	1768	2266	1919	2857	3418	242	1558	10702	12260
act 2007	1989	2520	1924	2866	3425	275	1599	11010	12609
act 2008	2013	2528	2100	2766	3416	237	1861	11047	12908
act 2009	1946	2377	2214	2971	3482	250	1786	11294	13080
act 2010	1978	2340	2181	3037	3574	259	1810	11391	13201
est 2011	1965	2377	2100	3087	3673	252	1907	11489	13396
est 2012	1971	2389	2135	3013	3746	247	1990	11530	13520
est 2013	1971	2391	2153	3066	3711	244	2062	11565	13627

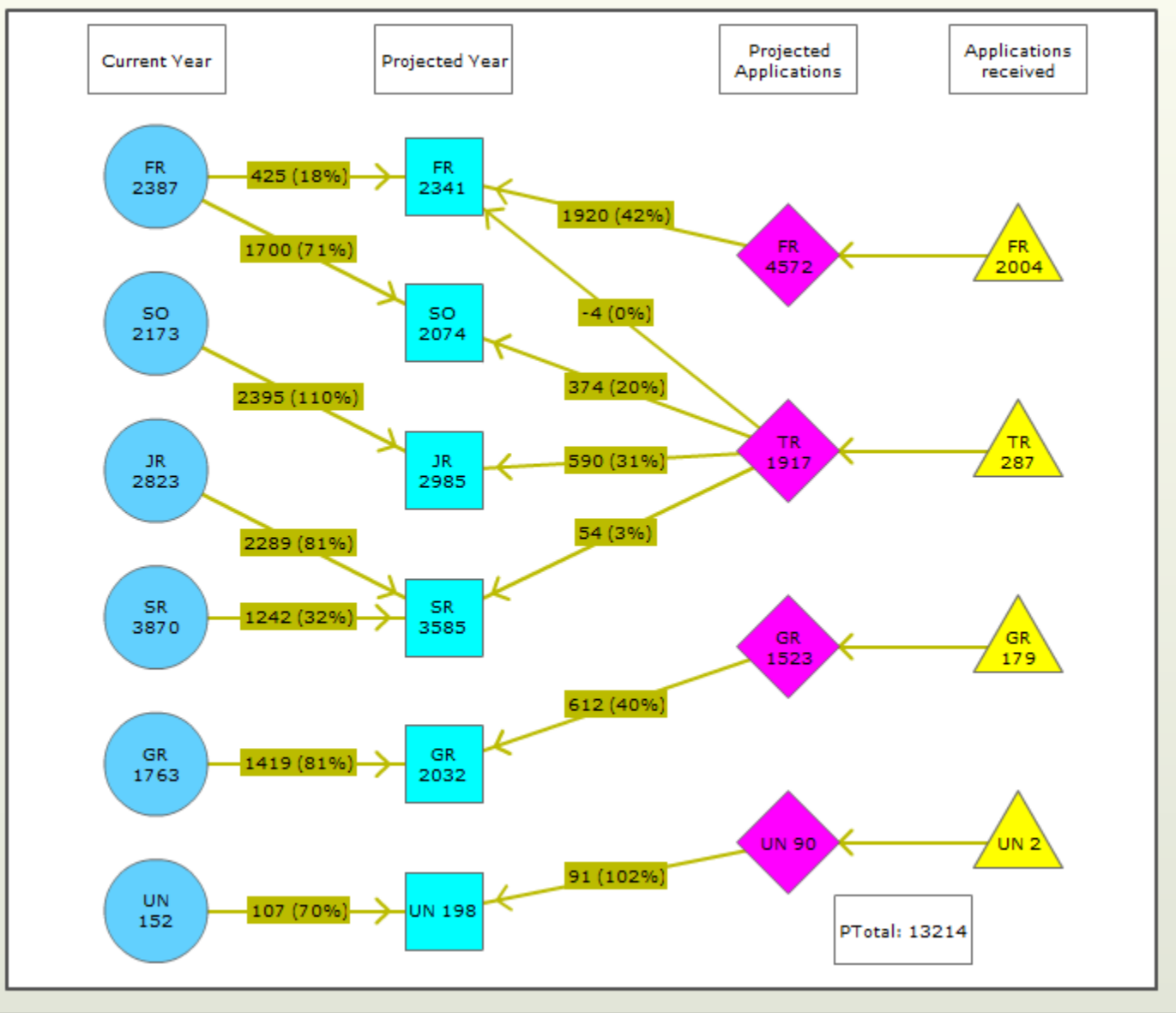
Problems

- Hard to Read
- Static
- Driver

Online

Date	FR Apps	PFR Apps	TR Apps	PTR Apps	GR Apps	PGR Apps	UN Apps	PUN Apps	PTotal E-1	PTotal E-2	PTotal E-3	PTotal E-4
Today	2004	4572	287	1917	179	1523	2	90	<u>13462</u>	<u>13554</u>	<u>13608</u>	<u>13604</u>
11-01-2011	1823	4572	259	1880	157	1494	2	90	<u>13431</u>	<u>13523</u>	<u>13576</u>	<u>13573</u>
10-15-2011	1274	4431	200	1828	124	1522	2	90	<u>13355</u>	<u>13441</u>	<u>13492</u>	<u>13489</u>
10-01-2011	893	4514	167	1930	98	1433	2	90	<u>13408</u>	<u>13502</u>	<u>13556</u>	<u>13553</u>

PTotal E-1	PTotal E-2	PTotal E-3	PTotal E-4
<u>13462</u>	<u>13554</u>	<u>13608</u>	<u>13604</u>
<u>13431</u>	<u>13523</u>	<u>13576</u>	<u>13573</u>
<u>13355</u>	<u>13441</u>	<u>13492</u>	<u>13489</u>
<u>13408</u>	<u>13502</u>	<u>13556</u>	<u>13553</u>



Forecast Breakdown

Current Year

Projected Year

FR
2387

425 (18%)

FR
2341

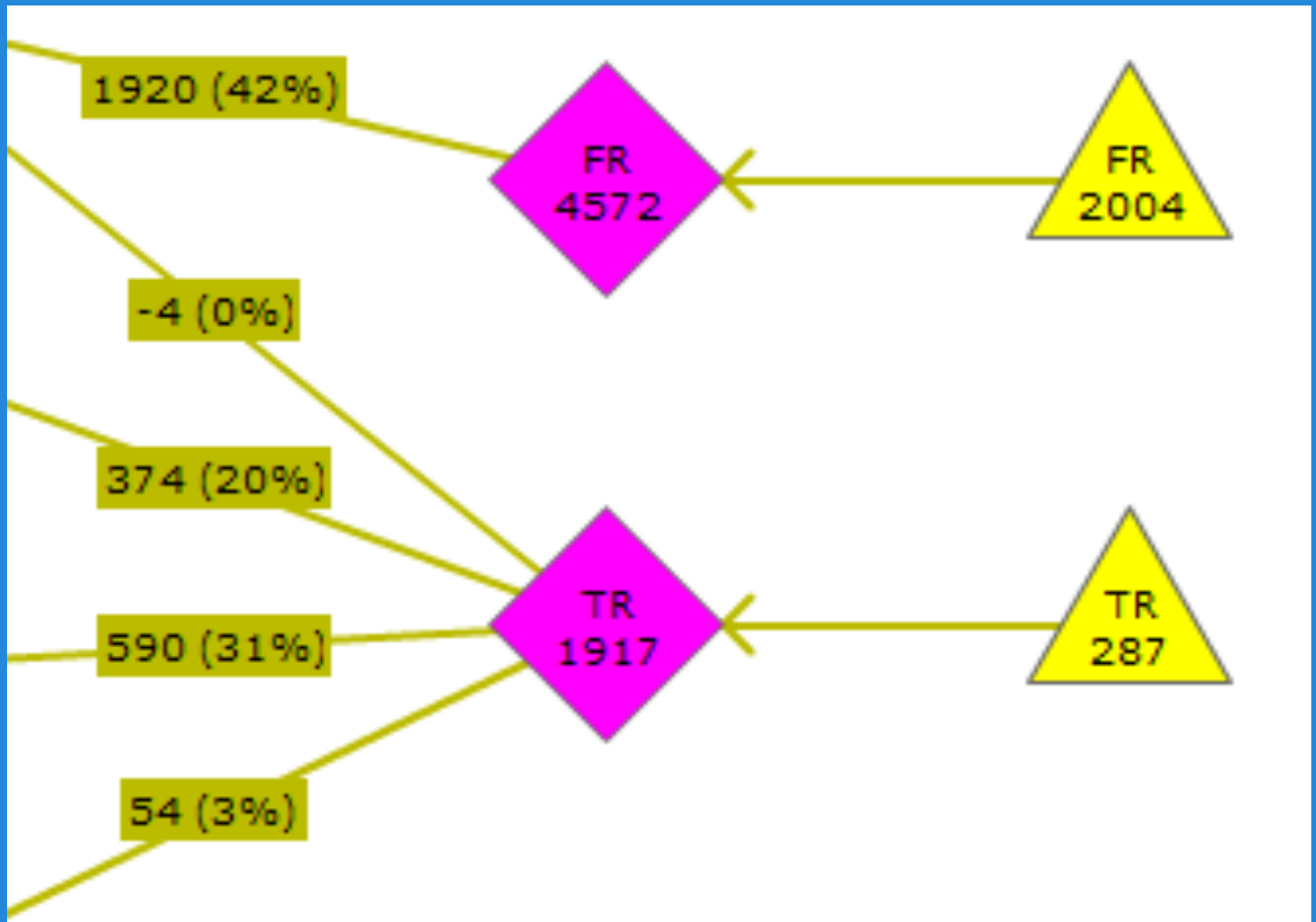
1700 (71%)

SO
2173

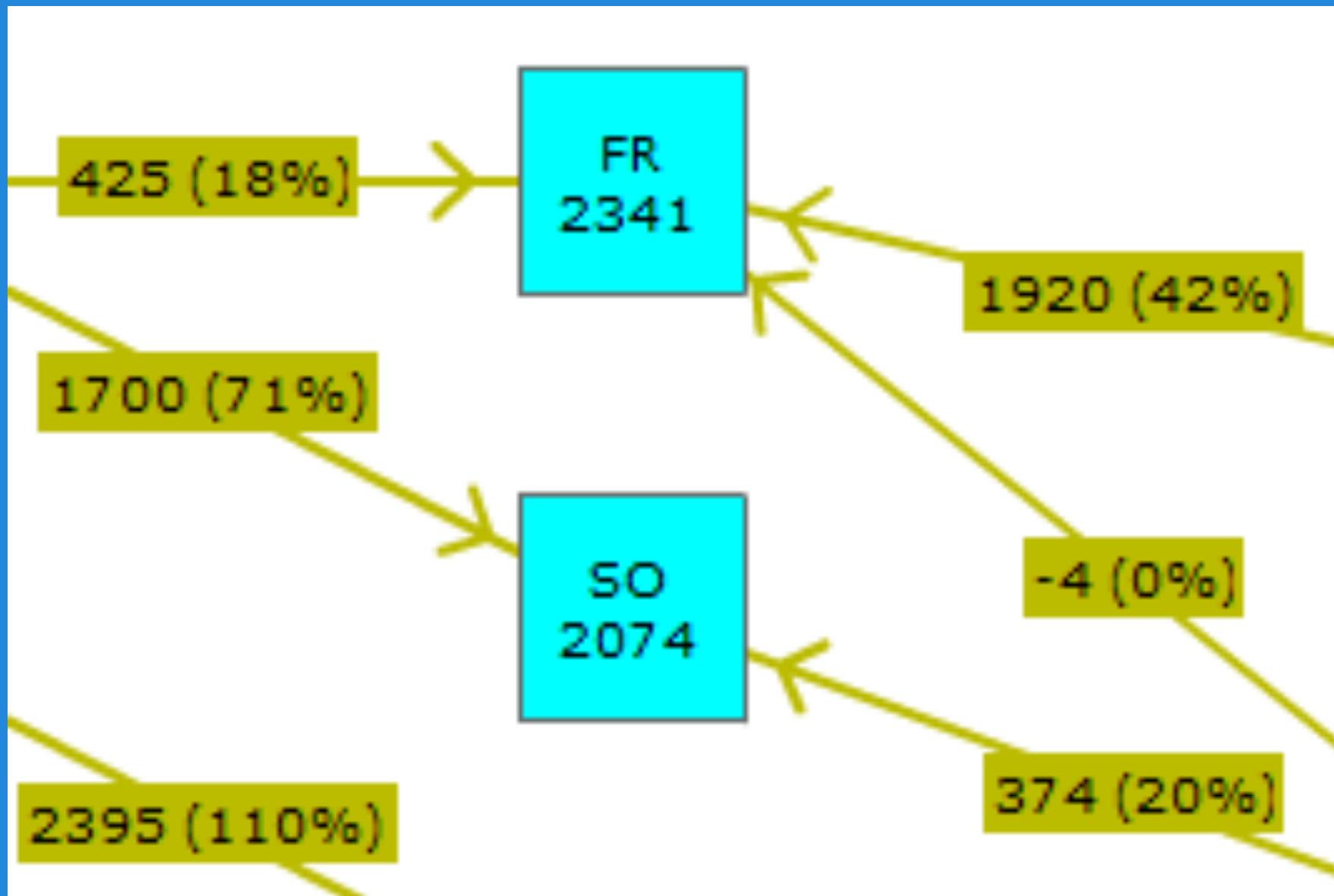
2395 (110%)

SO
2074

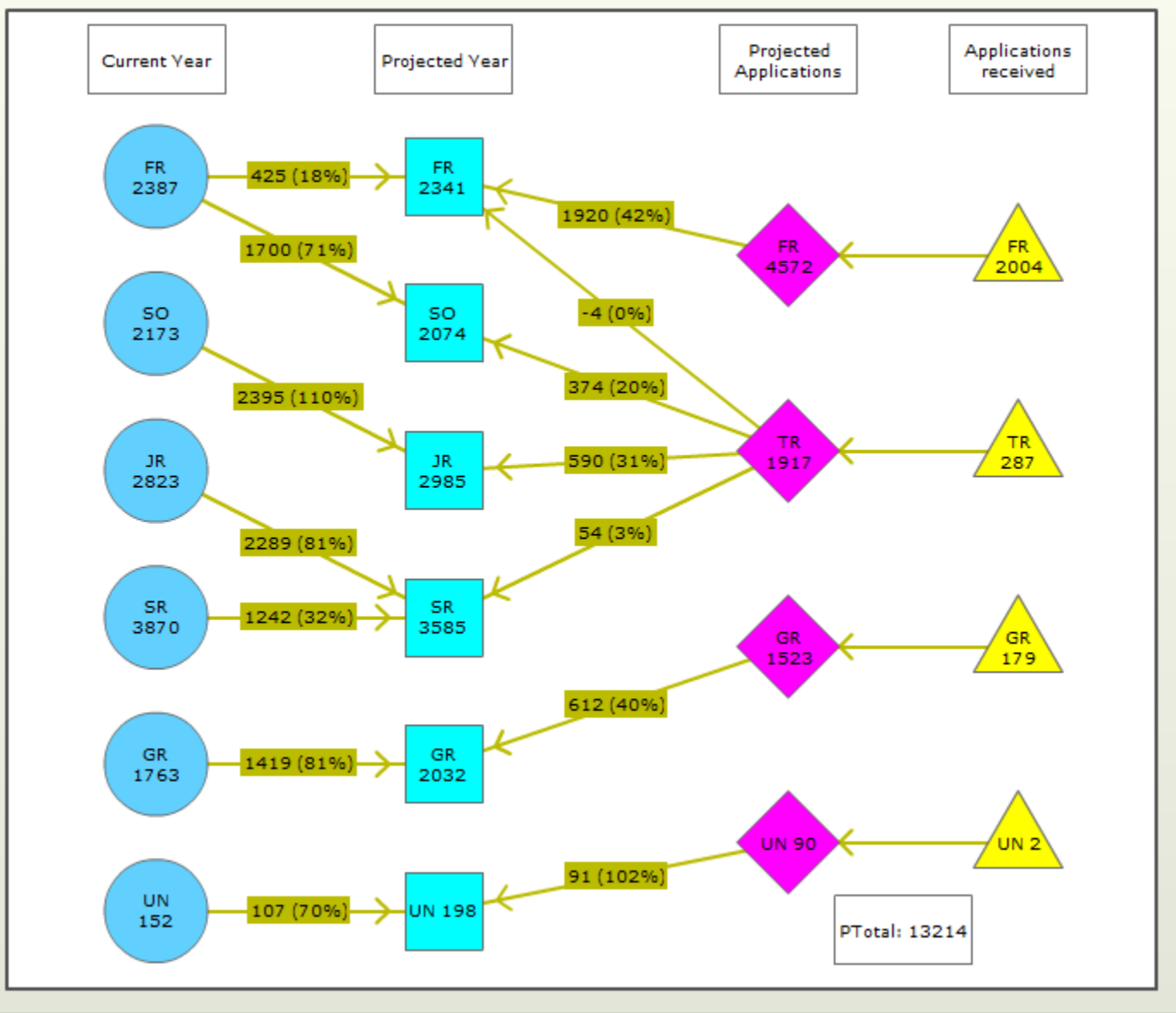
Returning Students



Incoming Applications



Projected Enrollment



Forecast Breakdown

Improvements

- Live Data
- Graphical Design
- Range of Data

What If?

- Graduation Rates
- Retention Rates
- Market Shares

Interactive Model

10 Year Enrollment Projections: A What-If Analysis

Retention of Freshman:

Original - 80%
New - 80%
Increase - 0%

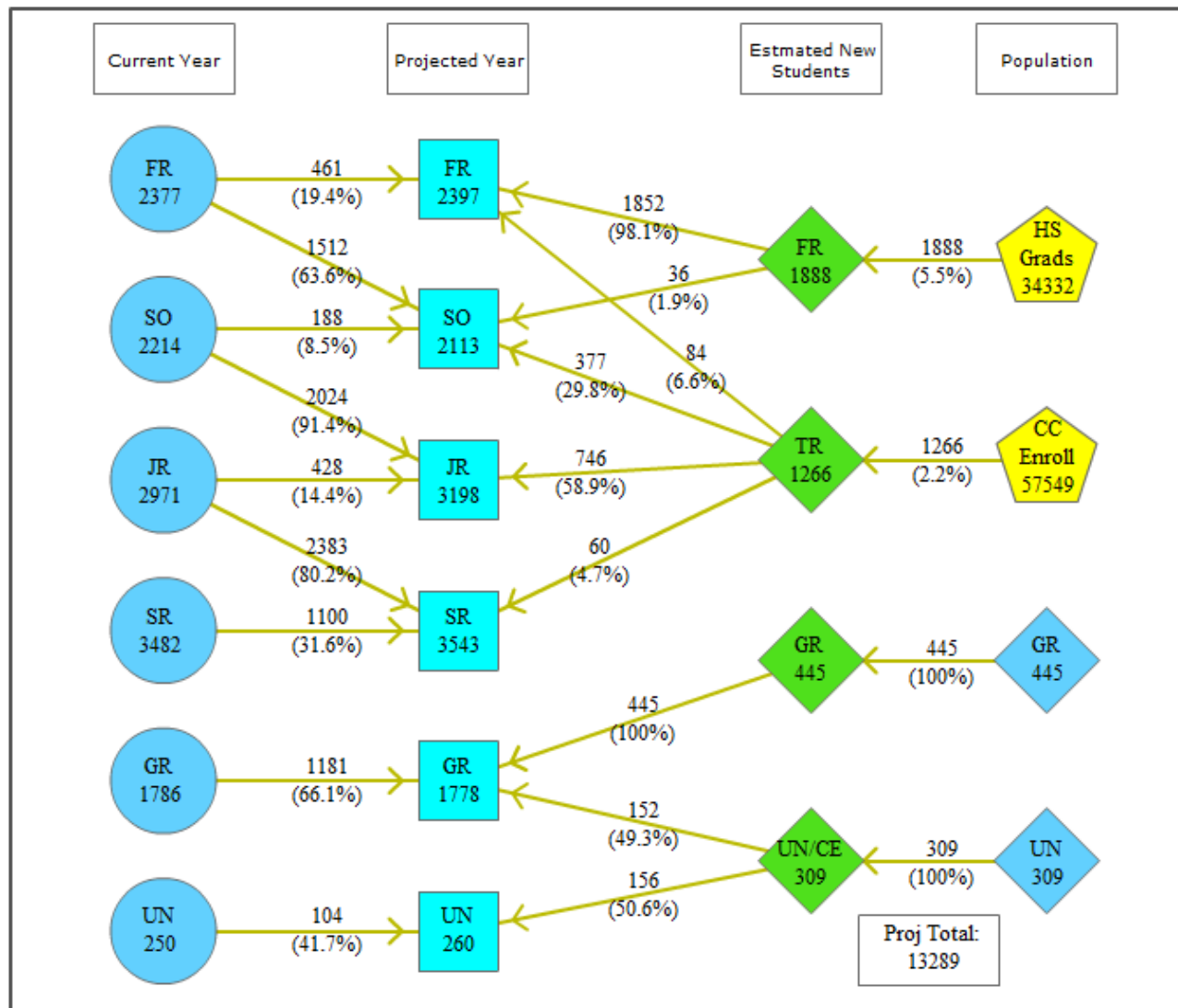
4 YR Graduation Rate:

Original - 35%
New - 35%
Increase - 0%

Currently using past the 4 years for averages.

Use:

- 1 Year (2009)
- 2 Years (2008 - 2009)
- 3 Years (2007 - 2009)
- 4 Years (2006 - 2009)



MarketShare of HS Grads:

Original - 5.2%
New - 5.2%
Increase - 0%

MarketShare of CC Enrollment:

Original - 2.2%
New - 2.2%
Increase - 0%

Growth Rate of Grads:

Original - 100%
New - 100%
Increase - 0%

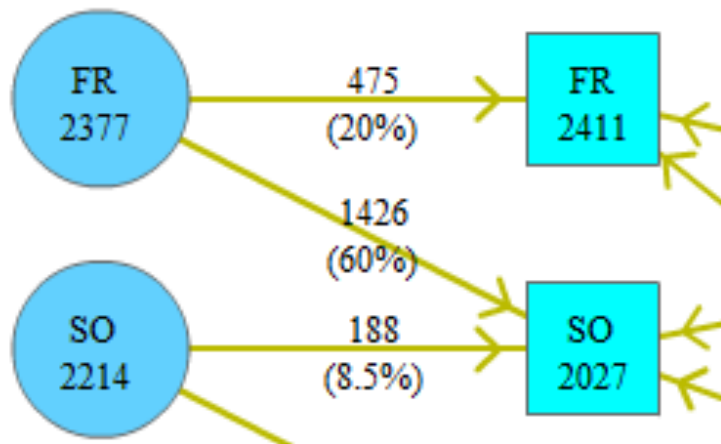
Growth Rate of Unclassified:

Original - 100%
New - 100%
Increase - 0%

	Previous Year						Population				Projected Year						
Year	FR	SO	JR	SR	GR	UN	HS Grads	CC Enroll	Grad	UN	FR	SO	JR	SR	GR	UN	Total
F2010	2377	2214	2971	3482	1786	250	34332	57549	445	309	2397	2113	3198	3543	1778	260	13289
F2011	2397	2113	3198	3543	1778	260	32910	58441	445	309	2326	2121	3149	3745	1772	264	13377

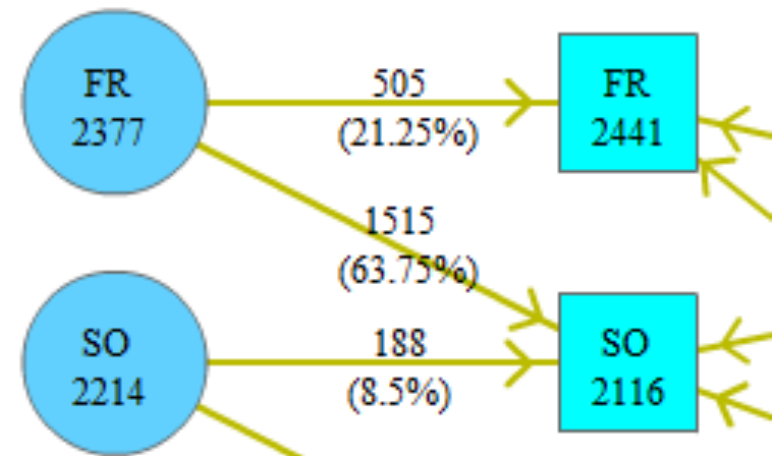
FR Retention Slider

FR Retention
80%



13217

FR Retention
85%

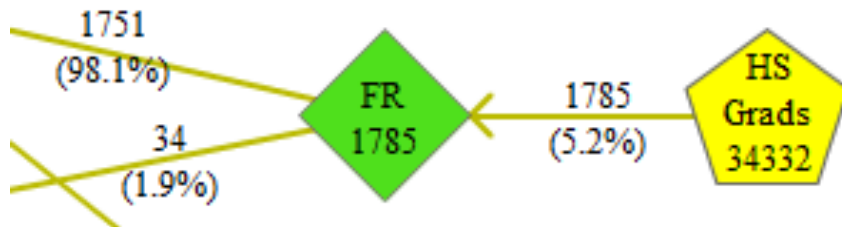


13336

HS Market Share

Market Share

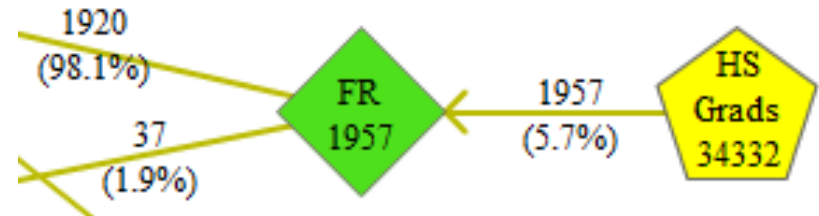
5.2%



FY 2015
12909

Market Share

5.7%



FY 2015
13579

Strategic Plan

	Previous Year						Population				Projected Year						
Year	FR	SO	JR	SR	GR	UN	HS Grads	CC Enroll	Grad	UN	FR	SO	JR	SR	GR	UN	Total
F2010	2377	2214	2971	3482	1786	250	34332	57549	445	309	2509	2117	3198	3543	1778	260	13405
F2011	2509	2117	3198	3543	1778	260	32910	58441	445	309	2458	2198	3153	3745	1772	264	13590
F2012	2458	2198	3153	3745	1772	264	32320	53685	445	309	2407	2141	3159	3768	1768	266	13509
F2013	2407	2141	3159	3768	1768	266	32530	55564	445	309	2411	2115	3132	3782	1766	267	13473
F2014	2411	2115	3132	3782	1766	267	32740	57508	445	309	2426	2129	3129	3766	1764	267	13481
F2015	2426	2129	3129	3766	1764	267	33330	59521	445	309	2466	2154	3168	3761	1763	267	13579
F2016	2466	2154	3168	3761	1763	267	33740	61056	445	309	2499	2192	3216	3792	1762	267	13728
F2017	2499	2192	3216	3792	1762	267	34077	61876	445	309	2526	2222	3268	3841	1762	267	13886
F2018	2526	2222	3268	3841	1762	267	34418	62084	445	309	2552	2243	3307	3899	1762	267	14030
F2019	2552	2243	3307	3899	1762	267	34128	62175	445	309	2540	2263	3332	3948	1762	267	14112

Improvements

- User Controlled
- Goal Planning
- Flow of Students

			2010 Projected Year					Graduated	Suspended	Left		
			Freshmen	Sophomores	Juniors	Seniors	Grad	Unclassified				
Current Students	Freshmen	2377	318	1466	106	2				71	414	1963
	Sophomores	2214		175	1595	113	1		1	54	275	1939
	Juniors	2971			404	2088	17		125	44	293	2678
	Seniors	3482				1070	157	8	1857	15	375	3107
	Grad	1786	2			7	832	5	344	5	591	1195
	Unclassified	250	8	2	2	5	12	24			197	53
		Apps	Enrolled									
New Applications In-State	Freshmen	3462	1822	1735	85	2						
	Transfer	1697	1057	54	330	613	60					
	Grad	871	210					210				
	Unclassified	72	179					99		80		
New Applications Out-of-State US	Freshmen	518	113	112	1							
	Transfer	126	43	2	11	28	2					
	Grad	361	43					43				
	Unclassified	3	94					62		32		
New Applications International	Freshmen	112	37	37								
	Transfer	103	36	1	19	11	5					
	Grad	237	42					42				
	Unclassified	31	45								45	
New Spring Enrollees			43	47	162	41	66	27	386			
Former Students			28	45	114	181	269	38	675			
TOT			2340	2181	3037	3574	1810	259				
			13201									

New Breakdown

		Past					Future				
		2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
New Enrollees In-State	Freshmen	1,583	1,852	1,841	1,804	1,822	1,827	1,783	1,783	1,798	1,788
	Transfer	1,054	1,014	984	1,021	1,057	1,021	1,016	1,025	1,021	1,021
	Grad	227	264	231	271	210	211	213	211	211	211
	Unclassified	103	84	95	140	179	138	146	146	144	146
New Enrollees Out-of-State US	Freshmen	142	112	137	107	113	116	112	115	115	114
	Transfer	47	40	44	37	43	41	40	41	41	41
	Grad	42	41	52	45	43	35	34	34	34	34
	Unclassified	32	32	95	57	94	82	82	82	82	82
New Enrollees International	Freshmen	29	13	18	23	37	26	26	26	26	26
	Transfer	13	20	22	30	36	29	32	32	31	32
	Grad	43	57	54	37	42	41	39	38	39	39
	Unclassified	78	84	54	48	45	53	51	55	53	53
New Spring Enrollees		359	471	378	430	386	398	405	396	400	400
Former Students		616	657	786	779	675	759	747	733	746	742
Multicultural Enrollment		760	745	810	904	922	1,000	1,000	1,000	1,000	1,000
Enrollment	Freshmen	2,266	2,520	2,528	2,377	2,340	2,396	2,358	2,355	2,370	2,361
	Sophomores	1,919	1,924	2,100	2,214	2,181	2,095	2,120	2,100	2,097	2,105
	Juniors	2,857	2,866	2,766	2,971	3,037	3,015	2,951	2,958	2,946	2,943
	Seniors	3,418	3,425	3,416	3,482	3,574	3,661	3,666	3,621	3,614	3,602
	Grad	1,558	1,599	1,861	1,786	1,810	1,819	1,827	1,820	1,821	1,820
	Unclassified	242	275	237	250	259	257	258	260	259	259
	Total	12,260	12,609	12,908	13,080	13,201	13,243	13,180	13,114	13,107	13,090
Multicultural Enrollment %		6.20%	5.91%	6.28%	6.91%	6.98%	7.55%	7.59%	7.63%	7.63%	7.64%
New International %		1.33%	1.38%	1.15%	1.06%	1.21%	1.13%	1.12%	1.15%	1.14%	1.15%
High School Market Share		4.70%	5.43%	5.32%	5.25%	5.54%	5.65%	5.48%	5.45%	5.39%	5.30%

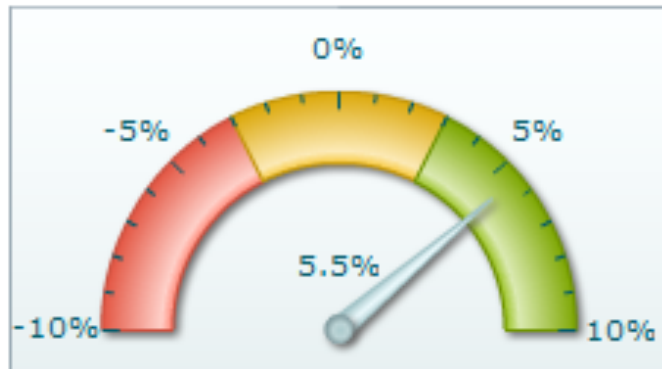
New Model

Improvements

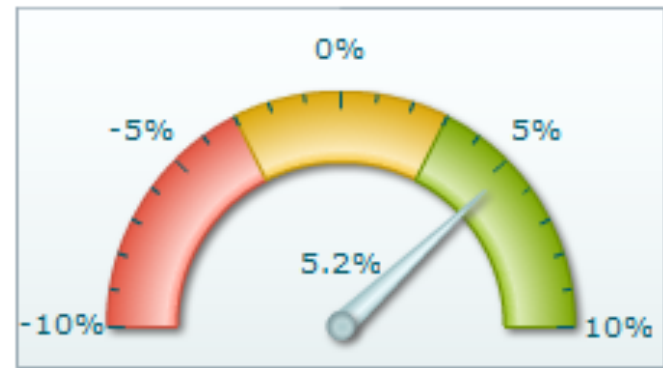
- Flow of Students
- User Inputs
- Accountability
- Increased Granularity

Dashboards

Applications

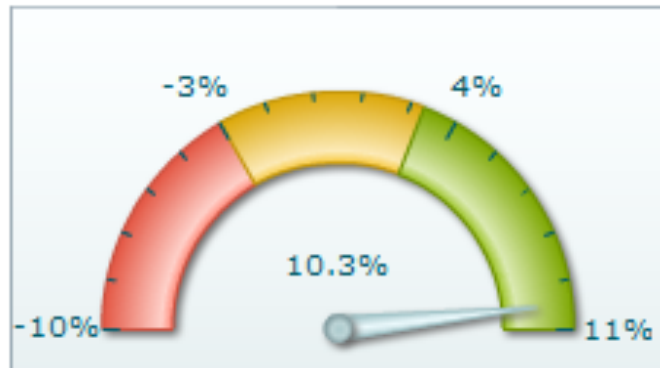
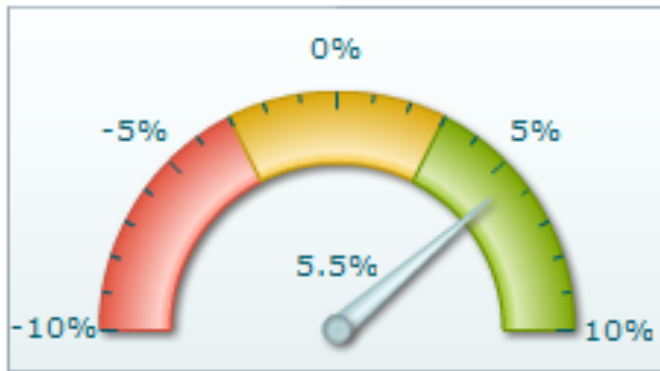


Admissions

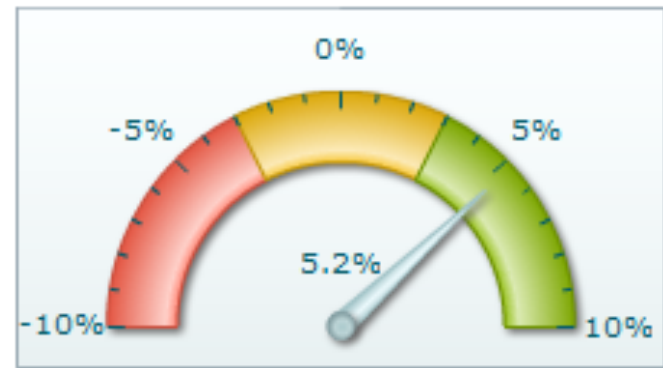


Dashboards

Applications

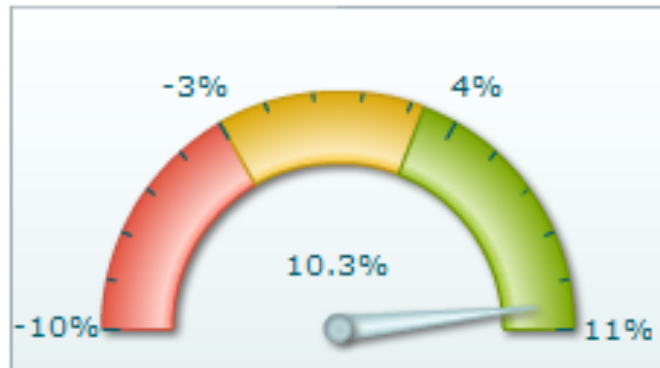
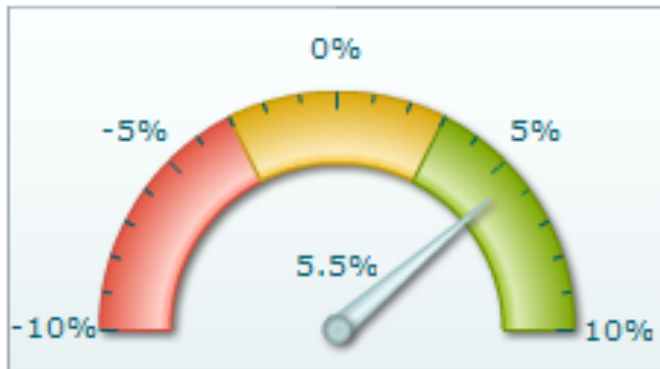


Admissions

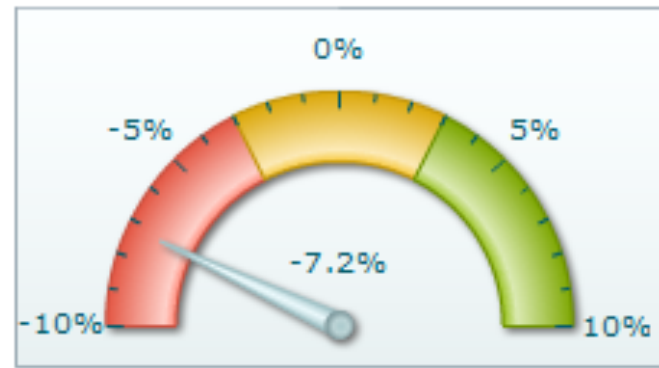
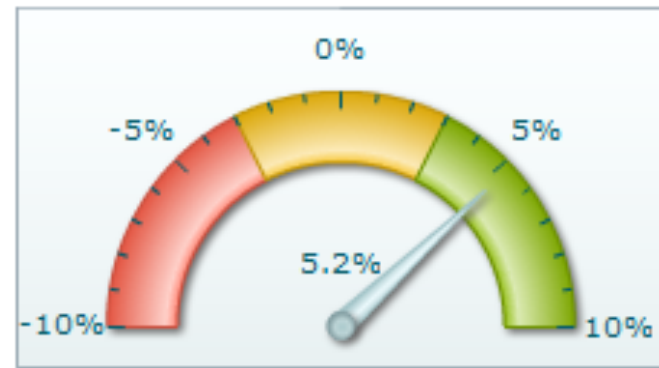


Dashboards

Applications



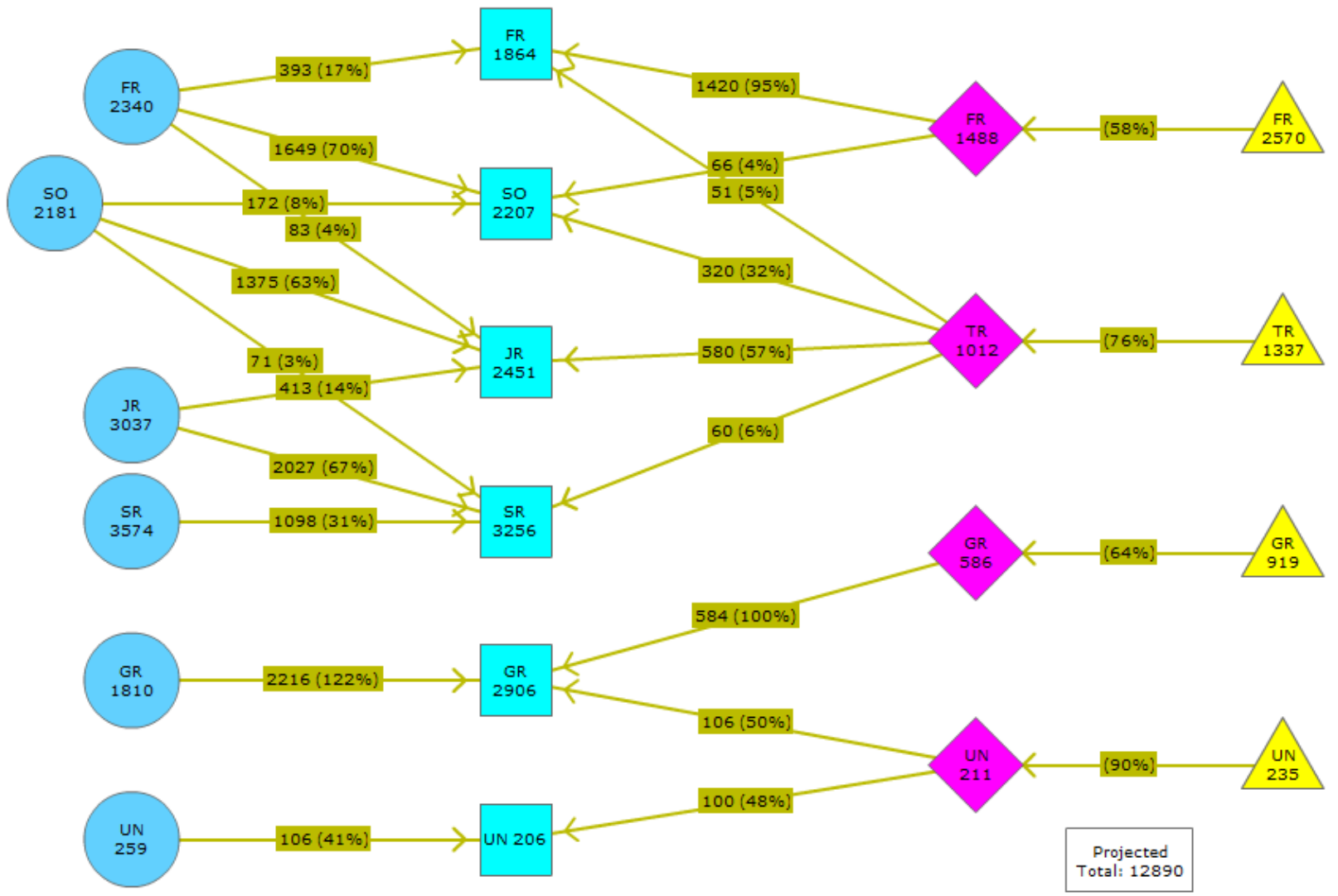
Admissions



Driving by Admits

Date	FR Admits	Proj FR Admits	TR Admits	Proj TR Admits	GR Admits	Proj GR Admits	UN Admits	Proj UN Admits	PTotal E-1	PTotal E-2	PTotal E-3	PTotal E-4
Today	2570	2570	1337	1337	913	919	235	235	12890	12906	12996	12972
11-01-2011	2570	2570	1336	1336	908	917	234	234	12888	12901	12992	12969
10-15-2011	2570	2570	1335	1335	903	913	215	215	12868	12881	12971	12947
10-01-2011	2570	2570	1335	1335	888	900	192	192	12840	12854	12943	12919
09-15-2011	2569	2569	1301	1302	874	891	176	176	12793	12809	12899	12875
09-01-2011	2567	2567	1297	1300	848	872	173	173	12775	12792	12884	12858
08-15-2011	2551	2558	1281	1303	774	844	154	154	12737	12755	12846	12820
08-01-2011	2535	2548	1252	1294	730	825	145	145	12706	12723	12812	12786
07-15-2011	2528	2548	1221	1289	701	808	131	131	12679	12696	12786	12759
07-01-2011	2517	2543	1187	1286	678	809	115	115	12662	12678	12768	12743

Current Year Projected Year Projected New Enrolled Students Projected Students Admitted



Models

- Spreadsheet
- Application Driven
- Interactive
- User inputs
- Driven by Admits

Need Based Change

Implementing

- Mandate
- Data Access
- Defined Goals
- Accurate Data

Questions?

Scott Busche

Office of Institutional Research

University of Northern Iowa

busche@uni.edu