





Higher Education Cost/Revenue Modeling Moving Beyond Spreadsheets to Support Strategic Resource Alignment

May 4, 2016

Agenda

- Cost Model Overview
- Model Usage





Cost Model Overview

Activity-based costing (ABC)



- Measures the **full cost** and performance of work activities and outputs
- Provides insight into the relationship between inputs (resources) and outputs by quantifying the work performed (activities)
- Recognizes the cause-and-effect relationship between the costs of outputs and the activities performed by an organization
- Reveals opportunities for business process improvement
- Promotes a cross-functional look at how outputs are delivered

ABC provides both process and cost views



The CAM-I Glossary of Activity-Based Management, Edited by Norm Raffish and Peter B. B. Turney, (Arlington: CAM-I, 1991.)

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Outputs and activities link to strategic goals



JCCC strategic goals



Activity-based costing is cross-functional

 ABC provides a comprehensive look at business processes and a cross-functional view of the institution



 The cost of an output is determined by aggregating the cost of the activities employed to produce the output

JCCC cost model design





Model Usage

Model uses and benefits

Uses

- One model multiple uses:
 - Course/program costing
 - Inform budgeting process
 - Margin analysis
 - Cost of teaching
 - Program and service reviews
- Improved ability to respond to changes:
 - Public funding
 - Sources of private funding
 - Govt. policy and legislation
- Rapid, accurate & detailed analysis by:
 - General ledger (fund, account, etc.)
 - Organizational entity
 - Room usage
 - Student type
 - Course & Program
 - Delivery type
 - Margin
 - CIP

Benefits

- Robust and transparent
- Reconcilable back to source data
- Rapid built, iterative improvements
- Extremely flexible and adaptable
- Highly automated / low maintenance
- Uses business rules and profiles
 - Start rules at a high level (90% accuracy for 10% effort)
 - Cascade rules down
 - Add detail as required
- Multi-period comparisons
- Simultaneous financial and operational analysis
- Drives conversations across college
- Provides foundation for predictive scenario modeling
- · Cleans up data within source systems

Areas of application

- Report on the economics of the institution's current situation
- Departmental planning and resource allocation
- Degree program analysis
- Student segmentation
- School, campus, and system resource allocation

As defined by William F Massy in *Reengineering the University, How to Be Mission Centered, Market Smart, and Margin Conscious* (Johns Hopkins University Press, 2015)

JCCC areas of application

- Report on the economics of the institution's current situation
 - Macro analysis of college outputs (e.g. museum, box office, book store, teaching divisions)
 - Impact of centralized expense and revenue accounts
- Departmental planning and resource allocation
 - Program cost analysis not just direct cost
- School, campus, and system resource allocation
 - Integration of success metrics (cost and non-cost) into discussions
 - Example: space usage and excess capacity impacts

Reporting output example

124 : Classroom

CC

1104 : English

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Asset Driver	Room Utilization	r								
Asset Dept	All Asset Dept									
Asset Buildi	ng All Asset Building									
			Course Term							
			Fall	Spring	Summer	Non Credit	Total Room Hours	Total % Utilized		
Building	 Dept 	Room	Room Hours	Room Hours	Room Hours	Room Hours		:		
■ ATB	🗏 1103 : Fine Arts	101 : Painting Studio	368	481	81		930	.46		
ATB	1103 : Fine Arts	109 : Art Studio	750	773	134		1,657	.83		
ATB	1103 : Fine Arts	111 : Ceramics Studio	557	580	81		1,218	.61		
ATB	1103 : Fine Arts	115 : Sculpture Studio	659	773	147	81	1,660	.83		
ATB	■ 1104 : English	132 : Classroom	506	385	105		996	.50		
ATB	1104 : English	133 : Classroom	535	345	70		951	.48		
ATB	1104 : English	134 : Classroom	444	431	105		979	.49		
ATB	1210 : Automotive Technology	129 : Classroom	471	615	123		1,209	.60		
ATB	1210 : Automotive Technology	182 : Lab-Automotive	218	192			411	.21		
ATB	1210 : Automotive Technology	183 : Lab-Automotive	231	296		18	546	.27		
ATB	1210 : Automotive Technology	185 : Lab-Automotive	261	181			442	.22		
ATB	1210 : Automotive Technology	190 : Lab-Automotive	607	606	110		1,322	.66		
ATB	1210 : Automotive Technology	192 : Lab-Automotive	88	381			469	.23		
ATB	1224 : Fine Art Photography	135 : Lab-Photo	467	580	161		1,208	.60		
ATB	1224 : Fine Art Photography	145D : Lab-Photo	187	96			283	.14		
ATB	1224 : Fine Art Photography	147 : Classroom	464	481	81		1,026	.51		
ATB	🗏 1225 : HVAC	148 : Lab-HVAC	290	441			731	.37		
ATB	1225 : HVAC	155 : Lab-Computer	45	45			90	.05		
ATB	1225 : HVAC	168C : Lab-HVAC	90				90	.05		
ATB	1226 : Metal Fab (Welding) Technology	146 : Lab-Metal Fabrication	123	164			287	.14		
ATB	1226 : Metal Fab (Welding) Technology	150 : Lab-Metal Fabrication	697	705	92		1,494	.75		
ATB	1229 : Industrial Technology	127 : Classroom	559	443	158		1,159	.58		
ATB	1229 : Industrial Technology	131 : Classroom	414	399	12		825	.41		
ATB	1277 : Railroad Industrial Technology	125 : Classroom	718	594	180		1,492	.75		
ATB	1277 : Railroad Industrial Technology	128 : Classroom	670	589	180		1,439	.72		
ATB	1277 : Railroad Industrial Technology	142 : Classroom	712	450	225		1,388	.69		
ATB	1279 : Electrical Technology	168B : Electrical-Lab	174	96	39		308	.15		
ATB	1279/1289 : 1279/1289	164A : Classroom	405				405	.20		
□CC	■ 1104 : English	122 : Lab-Computer		428	175	10	613	.31		

370

510

2

173

1,055

.53

Reporting output example

GrantThornton pilbaragroup e∰e-Product Type 🛛 🔻 Expense \$25,000,000.00 \$20,000,000.00 \$15,000,000.00 Direct vs Support Student Success and Engagement \$10,000,000.00 Department al Support (Non Credit) Departmental Support (Credit) Department Direct (Non Credit) \$5,000,000.00 Department Direct (Credit) Community Engagement College Support \$0.00 001232 - Fellen & Ferr 001220-BUS 00126-Techn 001251-5016 1.8 reitebusion trai 001255-Math 001280-Acaden corp. con 001231-Com ar 001265 ΨT Product Type Teaching Course Division 💌

Expense	Direct vs Support 💌							
	College Support	Community	Department Direct	Department Direct	Departmental	Departmental	Student Success	Grand Total
		Engagement	(Credit)	(Non Credit)	Support (Credit)	Support (Non	and Engagement	
Course Division 💌						Credit)		
001205 - VP Academic Affairs / CAO	\$29,398.94		\$333.94		\$7,346.95		\$9,304.68	\$46,384.51
001210 - Arts Humanities & Soc Sciences	\$11,021,398.52		\$6,611,136.87		\$2,560,084.82		\$2,150,083.14	\$22,342,703.35
001220 - Business	\$7,855,197.29		\$5,218,416.33		\$1,318,152.96		\$1,376,650.40	\$15,768,416.98
001226 - Technology	\$10,148,732.97		\$7,459,869.33		\$1,719,551.54		\$1,091,942.74	\$20,420,096.57
001231 - Communications	\$4,398,366.74		\$3,174,052.92		\$1,023,516.69		\$827,609.34	\$9,423,545.69
001232 - English & Journalism	\$5,670,164.80		\$3,886,224.11		\$1,104,556.50		\$1,161,061.66	\$11,822,007.08
001250 - Health Care Prof & Wellness	\$5,861,272.35		\$4,486,020.22		\$1,873,949.26		\$648,389.79	\$12,869,631.63
001251 - Sciences	\$8,175,083.00		\$5,070,467.48		\$1,692,541.65		\$1,385,839.65	\$16,323,931.77
001255 - Mathematics	\$6,165,388.69		\$3,504,726.41		\$1,495,135.02		\$1,296,647.02	\$12,461,897.14
001265 - Career & Tech Education Transitions	\$915,128.52		\$570,014.95		\$47,538.85		\$51,964.77	\$1,584,647.09
001280 - Academic Support	\$289,988.06		\$54.84		\$495,903.76		\$842.41	\$786,789.07
COED - Continuing Ed	\$4,802,126.32	\$106,478.43	\$3,702.89	\$5,670,574.10	\$406,101.31	\$1,577,468.66		\$12,566,451.70
Grand Total	\$65,332,246.19	\$106,478.43	\$39,985,020.30	\$5,670,574.10	\$13,744,379.29	\$1,577,468.66	\$10,000,335.61	\$136,416,502.58

Improved maturity over time



Some final thoughts...

- Cost by itself is not a good metric, it is important to incorporate success metrics
- The model provides insights which need to be assessed and prioritized
- There is no right answer
- Sometimes high cost is a good cost
- Quantification of "gut-feel" will help JCCC achieve its mission more effectively

Have Questions? We've got nswers!





Contact Information

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