



University Industry
Demonstration Partnership

Corporate Scorecard: Moving From Measures to Key Performance Indicators

Daniel Kramer, Ph.D.

AVP, Industry Liaison Office, Office of Research
Ohio State University

Corporate Scorecard

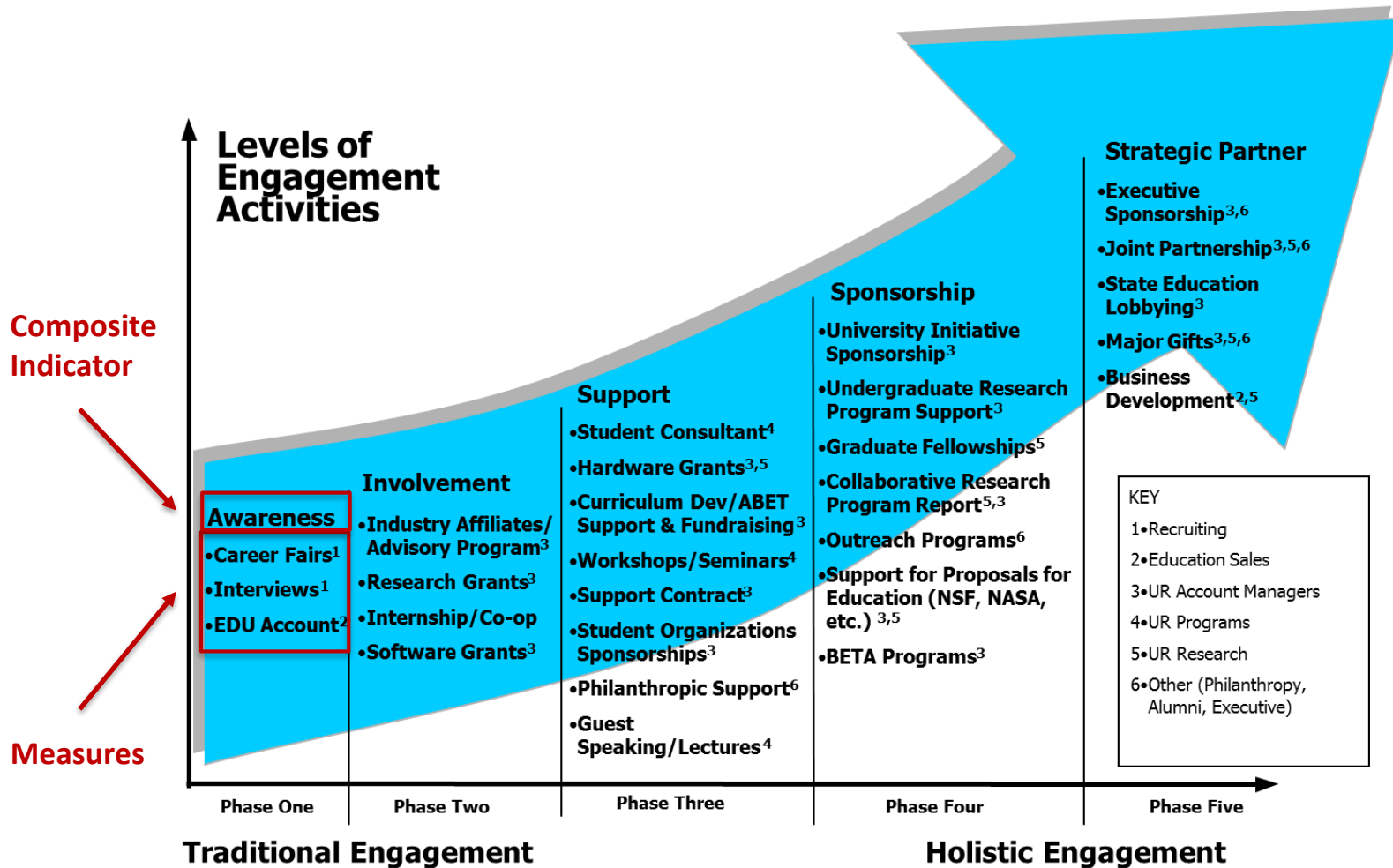
Presentation Segments

- Background
 - Measures, Metrics (Composite Indicator), and Key Performance Indicators (KPI)
 - Industry/University Continuum Model
 - OSU Corporate Engagement Framework
- Corporate Scorecard Objectives (As-Is Model)
- Corporate Scorecard Design, Utilization, and Issues (As-Is Model)
- Corporate Scorecard Objectives (To-Be Model)
- Corporate Scorecard Design Framework (To-Be Model)
- Open Discussion

Measures, Metrics, & Key Performance Indicators (KPI)

- Measures: numbers or values that can be summed and/or averaged, such as sales, leads, distances, durations, temperatures, and weight
- Metric (Composite Indicator): a quantifiable measure that is used to track and assess the status of a specific process
- Key Performance Indicator: a measurable value that demonstrates how effectively key business objectives are being achieved. Often an aggregation of composite indicators.

The Industry/University Continuum Model



Corporate Engagement Domains and Constituents Served

Another way to look at Composite Indicators

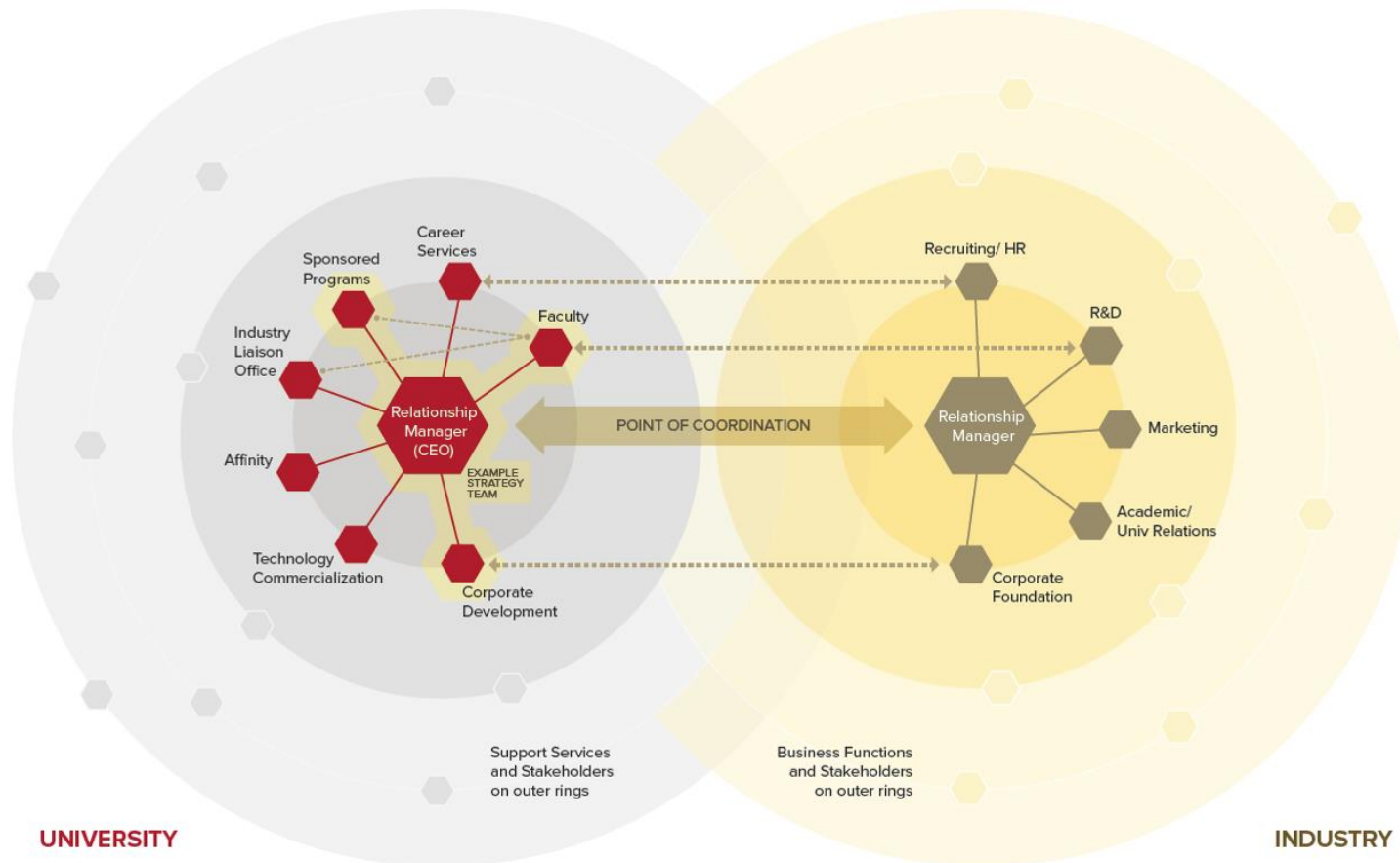
Domain	Support Provided to Ohio State Faculty, Staff, and Students	Support Provided to Corporate Partners
Research, Development, and Innovation	<ul style="list-style-type: none"> Educate faculty, staff, and students about corporate funding processes and opportunities Provide funded and non-funded RD&I opportunities Provide a lens to the markets for science 	<ul style="list-style-type: none"> Connect partners to faculty, staff, and students engaged in relevant science Connect partners to state-of-the-art facilities available for corporate use
Student Recruitment	<ul style="list-style-type: none"> Connect faculty to partners with real-world problems for student engagement Connect students to internships, co-ops, full-time jobs and experiential learning opportunities 	<ul style="list-style-type: none"> Connect partners to career services for the purpose of student recruitment/engagement
Philanthropy	<ul style="list-style-type: none"> Solicit gifts for fellowships, professorships, and student scholarships 	<ul style="list-style-type: none"> Develop a menu of philanthropy and sponsorship opportunities that aligns with strategic priorities
Affinity	<ul style="list-style-type: none"> Funding for scholarship, research, and general use Benefits to alumni that build strong brand loyalty to Ohio State Solicit corporate partners for event/program sponsorships, speakers and participants 	<ul style="list-style-type: none"> Leverage Ohio State non-academic assets to support corporate objectives Develop a strategy for marketing and branding to Ohio State faculty, staff, students, and alumni; resulting in greater market share and income.
Tech Transfer	<ul style="list-style-type: none"> Assist Ohio State inventors in tech commercialization 	<ul style="list-style-type: none"> Assist partners in identifying technology commercialization opportunities
Executive Education	<ul style="list-style-type: none"> High margin educational business. Continuing education for alumni. 	<ul style="list-style-type: none"> Executive education/professional development opportunities

Corporate Engagement Functions: Roles and Subject Matter Expertise

**Does not deliver assets.
Success dependent on
other functions.
Adds missing SME.**

Entity	Role	Subject Matter Expertise
Affinity	<ul style="list-style-type: none"> Responsible for the use of the Ohio State brand on products and services; university promotions and advertising; sponsorships; affinity programs; and enforcement of the brand. 	<ul style="list-style-type: none"> Affinity Marketing/branding
Career Services	<ul style="list-style-type: none"> Personalizes the talent recruitment process to target specific groups of students in a variety of ways, from career fairs to internships and co-ops. 	<ul style="list-style-type: none"> Student recruitment opportunities and strategies
Corporate Development	<ul style="list-style-type: none"> Identifies and delivers philanthropic and sponsorship opportunities that align with a corporate partner's strategic priorities. 	<ul style="list-style-type: none"> Philanthropy Sponsorship
Corporate Engagement Office (CEO)	<ul style="list-style-type: none"> Single point of coordination and a comprehensive approach to university engagement for companies that meet a threshold of internally set criteria. Leads the development of strategic partnership plans. 	<ul style="list-style-type: none"> Strategy formation and execution Customer Service
Faculty	<ul style="list-style-type: none"> Engage with corporate partners for the purpose of research, development, and ideation; continuing education; and student engagement opportunities. 	<ul style="list-style-type: none"> Content area experts Professional Development
Industry Liaison Office (ILO)	<ul style="list-style-type: none"> Connects corporate partners to content area experts within the university for the purpose of engaging in industry-sponsored research, development, and ideation. Educates faculty, staff and students on how to engage with industry. Research business intelligence, mapping, and competency analysis. 	<ul style="list-style-type: none"> Research, development, and innovation (RD&I) business practices, needs assessment, and program execution Research business intelligence, mapping, and competency analysis
Sponsored Programs (OSP)	<ul style="list-style-type: none"> Negotiate sponsored research agreements with sponsors. 	<ul style="list-style-type: none"> Sponsored Research and Testing/Service Agreements Faculty consulting
Tech Commercialization Office (TCO)	<ul style="list-style-type: none"> Translates academic discoveries into commercial products. Engages with corporate partners for the purpose of technology transfer. 	<ul style="list-style-type: none"> Faculty inventors and inventions Technology transfer

OSU Corporate Engagement Framework



Corporate Scorecard Objectives (As-Is Model)

- Provide a concise view of the span of university engagement for every existing corporate partner
- Provide a 'weighting' related to the depth and breadth of engagement for each partner
- Illuminate opportunities within existing relationships
- Catalyze conversations between the university's corporate engagement functions
- Drive culture change from corporate engagement functions acting as isolated, vertical siloes to collaborative teams seeking to establish holistic win-win alliances that maximize value for the university and the corporate partner

Corporate Scorecard (As-Is Model)

Corporate Engagement Scorecard FY12 - FY16		Revenue by Data Source				Dollars Out	Recruiting		Non-Dollar								Scorecard Premiums				TOTAL	
Company	Rank	Office of Sponsored Programs (OSP) (5 year sum of data)	Technology Commercialization Office (TCO) (5 year sum of data)	The Advancement System (TAS) (5 year sum of data)	Matching Gifts by Employer (5 year sum of data)	Purchasing (5 year sum of OSU spend)	Full Time Hires (5 year sum of data)	Interns / Co-ops (5 year sum of data)	Master Research Agreement Yes() / No()	OSU Preferred School Yes() / No()	C-Suite OSU Alumni Yes() / No()	Affinity Agreement Yes() / No()	Suite Lease Yes() / No()	Executive Education Yes() / No()	OSU Board Membership (Dean's level or above) Yes() / No()	Consortium Membership / Key Unit Partnerships 1-3() 4(+2)	Financial Premium \$0-\$250K = 0 \$250K-\$1M = 1 \$1M-\$2.5M = 2 \$2.5M-\$5M = 3 \$5M + = 4	Purchasing Premium \$0-\$1M = 0 \$1M-\$10M = 1 \$10M + = 2	Hire Premium 0-10 = 0 11-30 = 1 31-80 = 2 81-110 = 3 111 + = 4	Non-Dollar Premiums 1-2 = 1 3-4 = 2 5-6 = 3 7 + = 4	TOTAL	
Company #1	1	\$ 129,718		\$ 5,488,008	\$ 395,391	\$ 826,923,544	81	103			1				1	1	2	4	2	4	4	14
Company #2	2	\$ 7,855,772		\$ 805,961	\$ 467,007	\$ 54,871,093	182	459	1							1	2	4	2	4	3	13
Company #3	3	\$ 379,523		\$ 5,066,225	\$ 640,446		119	147			1	1	1	1	1	1	2	4	0	4	4	12
Company #4	4	\$ 7,362,390		\$ 1,044,968	\$ 155,492		42	106	1		1					1	1	4	0	4	3	11
Company #5	4	\$ 2,053,582		\$ 892,815	\$ -	\$ 5,834,822	88	74		1	1				1	2	3	1	4	4	3	11
Company #6	4	\$ 7,158,014	\$ 34,551	\$ 5,857,535	\$ 9,951		138	285	1		1				1	2	4	0	4	4	3	11
Company #7	7	\$ 263,177		\$ 3,050,022	\$ 51,665	\$ 90,140,088	28	36		1	1		1		1	2	3	2	2	3	3	10
Company #8	7	\$ 686,142		\$ 2,463,600	\$ -		119	116	1		1					1	2	3	0	4	3	10
Company #9	7			\$ 19,208,307	\$ -		25	78			1	1	1			1	4	0	3	3	3	10
Company #10	7			\$ 899,864	\$ 152,576	\$ 19,542,252	77	36		1	1					1	2	2	4	4	2	10
Company #11	7	\$ 2,648,332		\$ 309,300	\$ 311,065	\$ 77,992,716	19	81	1		1					1	3	2	3	3	2	10
Company #12	7	\$ 668,531	\$ 5,000	\$ 19,251,906	\$ 5,062	\$ 57,113,805	6	37	1		1					1	4	2	2	2	2	10
Company #13	13	\$ 243,478		\$ 5,270,698	\$ 1,300	\$ 10,862,997	3	8			1	1	1			1	4	2	1	2	2	9
Company #14	13	\$ 1,551,778	\$ 72,188	\$ 1,235,918	\$ 48,157		52	79	1	1	1					1	3	0	4	4	2	9
Company #15	15	\$ 1,591,267		\$ 404,081	\$ 195,256	\$ 14,412,803	21	45	1		1				1	2	2	2	2	2	2	8
Company #16	15			\$ 886,173	\$ 478,980	\$ 482,050	231	110			1					1	2	0	4	4	2	8
Company #17	15	\$ 3,693,982		\$ 47,300	\$ -		33	51			1				1	2	3	0	3	3	2	8
Company #18	15	\$ 76,064		\$ 967,269	\$ 343,309		266	242			1					2	2	0	4	4	2	8
Company #19	15			\$ 1,083,691	\$ -		88	159			1				1	1	2	0	4	4	2	8
Company #20	15	\$ 1,195,313		\$ 955,260	\$ -		61	95	1		1				1	2	2	0	4	4	2	8

Revenue Premium Scoring

- \$0-\$250K = 0
- \$250K-\$1M = 1
- \$1M-\$2.5M = 2
- \$2.5M-\$5M = 3
- \$5M + = 4

Purchasing Premium Scoring

- \$0-1M = 0
- \$1M-\$10M = 1
- \$10M + = 2


Recruiting Premium Scoring

- 0-10 = 0
- 11-30 = 1
- 31-80 = 2
- 81-110 = 3
- 111 + = 4

Non-Dollar Premium Scoring

- 1-2 = 1
- 3-4 = 2
- 5-6 = 3
- 7 + = 4

Corporate Scorecard (As-Is Model)

 THE OHIO STATE UNIVERSITY		Scorecard Premiums					
Corporate Engagement Scorecard FY12 - FY16		Rank	Financial Premium	Purchasing Premium	Hire Premium	Non-Dollar Premiums	TOTAL
Company			<i>\$0-\$250K = 0</i> <i>\$250K-\$1M = 1</i> <i>\$1M-\$2.5M = 2</i> <i>\$2.5M-\$5M = 3</i> <i>\$5M+ = 4</i>	<i>\$0-\$1M = 0</i> <i>\$1M-\$10M = 1</i> <i>\$10M+ = 2</i>	<i>0-10 = 0</i> <i>11-30 = 1</i> <i>31-80 = 2</i> <i>81-110 = 3</i> <i>111+ = 4</i>	<i>1-2 = 1</i> <i>3-4 = 2</i> <i>5-6 = 3</i> <i>7+ = 4</i>	
Company #1	1	4	2	4	4	14	
Company #2	2	4	2	4	3	13	
Company #3	3	4	0	4	4	12	
Company #4	4	4	0	4	3	11	
Company #5	4	3	1	4	3	11	
Company #6	4	4	0	4	3	11	
Company #7	7	3	2	2	3	10	
Company #8	7	3	0	4	3	10	
Company #9	7	4	0	3	3	10	
Company #10	7	2	2	4	2	10	
Company #11	7	3	2	3	2	10	
Company #12	7	4	2	2	2	10	
Company #13	13	4	2	1	2	9	
Company #14	13	3	0	4	2	9	
Company #15	15	2	2	2	2	8	
Company #16	15	2	0	4	2	8	
Company #17	15	3	0	3	2	8	
Company #18	15	2	0	4	2	8	
Company #19	15	2	0	4	2	8	
Company #20	15	2	0	4	2	8	
Company #21	21	1	0	4	2	7	
Company #22	21	2	0	2	3	7	
Company #23	21	1	0	4	2	7	
Company #24	21	1	0	4	2	7	
Company #25	21	2	0	4	1	7	

Corporate Scorecard (As-Is Model)

Limitations and Issues

- A collection of measures at a point in time; not metrics or KPIs
- Measures and composite indicators (scoring premiums) based on simple view of the I/U continuum model. Not reflective of the realities of engagement at OSU.
- Minimum consideration of data: fit-for-purpose, distribution, integrity, weighting, normalization, robustness, and sensitivity
- Partners are ranked against one another based on 'capped' scores, therefore limited potential to extract a weighted index for corporate engagement
- The total portfolio of companies, or a portion thereof, is not measured against historic ROI based on the same or similar cohort
- Lack of KPIs of interest to key internal sponsors and stakeholders
- Lack of metrics or KPIs of utility to the corporate engagement team within its sphere of actively managed accounts

Corporate Scorecard (To-Be Model)

The case for a KPI generating Scorecard

- Growth Strategy
 - OSU at \$900MM annual research expenditure
 - Desires to grow to \$1.5B in 5-7 years
 - 6000 X \$100k relationships or 300 X \$2MM relationships?
- What is the 'Corporate Engagement Team' responsible for? What do they control?
 - Responsibility for key/strategic accounts?
 - Responsibility for all corporate ROI?
 - Active management, passive management, or indirect influence?

Corporate Scorecard (To-Be Model)

The case for a KPI generating Scorecard (Cont.)

- What do the sponsors of the 'Corporate Engagement Team' **want** to know?
 - Growth in monetized ROI
 - Growth in number and depth of key/strategic relationships
- What does the 'Corporate Engagement Team' **need** to know?
 - Which key/strategic accounts have room to grow?
 - Which key/strategic accounts have reached capacity or are declining?
 - Where are the displacing or additive opportunities?
 - Is ROI increasing within the Corporate Engagement Team's sphere of influence?

Corporate Scorecard Objectives (To-Be Model)

- Retain objectives of the current model
- Utilize composite indicators based on OSU mission/goals, holistic engagement, fitness-for-purpose, and thoughtful analytics
- Provide a KPI in the form of an un-capped index that reflects the health of corporate engagement based on a dynamically-adjusting top tier of accounts [e.g. S&P 100]
- Allow displacement of companies in the index based on dynamic valuation
- Update in near real-time sufficient to support tactical and strategic allocation of corporate engagement resources. Know who the top tier partners are at all times in order to drive engagement.

Corporate Scorecard (To-Be Model)

Approach: Methodical Use of Composite Indicators

1. Theoretical framework: Select and combine single indicators into a meaningful composite indicator under a fitness-for-purpose principle
2. Data selection: Indicators should be selected on the basis of their analytical soundness, measurability, coverage, relevance to the phenomenon being measured and relationship to each other
3. Imputation of missing data: Consideration should be given to different approaches for imputing missing values. Extreme values should be examined as they can become unintended benchmarks
4. Multivariate analysis: An exploratory analysis should investigate the overall structure of the indicators, assess the suitability of the data set and explain the methodological choices, e.g. weighting, aggregation
5. Normalization: Indicators should be normalized to render them comparable. Attention needs to be paid to extreme values as they may influence subsequent steps in the process of building a composite indicator

Corporate Scorecard (To-Be Model)

Approach: Methodical Use Composite Indicators (Cont.)

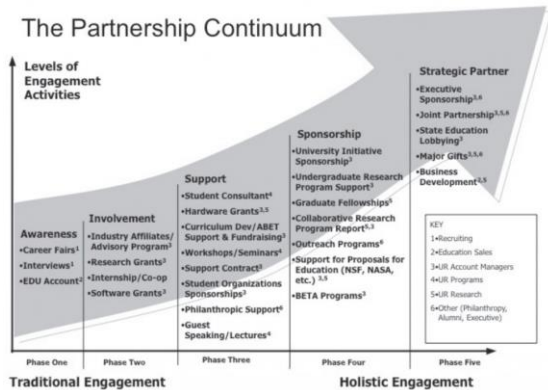
6. Weighting and aggregation: Indicators should be aggregated and weighted according to the underlying theoretical framework
7. Robustness and sensitivity: Analysis should be undertaken to assess the robustness of the composite indicator in terms of, e.g., the mechanism for including or excluding single indicators, the normalization scheme, the imputation of missing data, the choice of weights, and the aggregation method
8. Back to the real data: Composite indicators should be transparent and fit to be decomposed into their underlying indicators or values
9. Links to other variables: Attempts should be made to correlate the composite indicator with other published indicators, as well as to identify linkages through regressions
10. Presentation and Visualization: Composite indicators can be visualized or presented in a number of different ways, which can influence their interpretation

Corporate Scorecard (To-Be Model)

Alignment with OSU's Mission and Goals

- Teaching and Learning: to provide an unsurpassed, student-centered learning experience led by engaged world-class faculty and staff, and enhanced by a globally diverse student body
- Research and Innovation: to create distinctive and internationally recognized contributions to the advancement of fundamental knowledge and scholarship and toward solutions of the world's most pressing problems
- Outreach and Engagement: to advance a culture of engagement and collaboration involving the exchange of knowledge and resources in a context of reciprocity with the citizens and institutions of Ohio, the nation, and the world
- Resource Stewardship: to be an affordable public university, recognized for financial sustainability, unparalleled management of human and physical resources, and operational efficiency and effectiveness

Corporate Scorecard (To-Be Model) Continuum Translated into OSU Mission



Awareness	Involvement	Support	Sponsorship	Strategic Partner
Career Fairs	Industry Affiliates/Advisory Program	Student Consultant	University Initiative Sponsorship	Executive Sponsorship
Interviews	Research Grants	Hardware Grants	Undergraduate Research Program Support	Joint Partnership
EDU Account	Internship/Co-op	Curriculum Dev / ABET Support and Fundraising	Graduate Fellowship	State Educations Lobbying
	Software Grants	Workshops/Seminars	Collaborative Research Program Report	Major Gifts
		Student Organizations Sponsorships	Outreach Programs	Business Development
		Philanthropic Support	Support for Proposals for Education	
		Guest Speaking/Lectures	BETA programs	

Composite Indicators

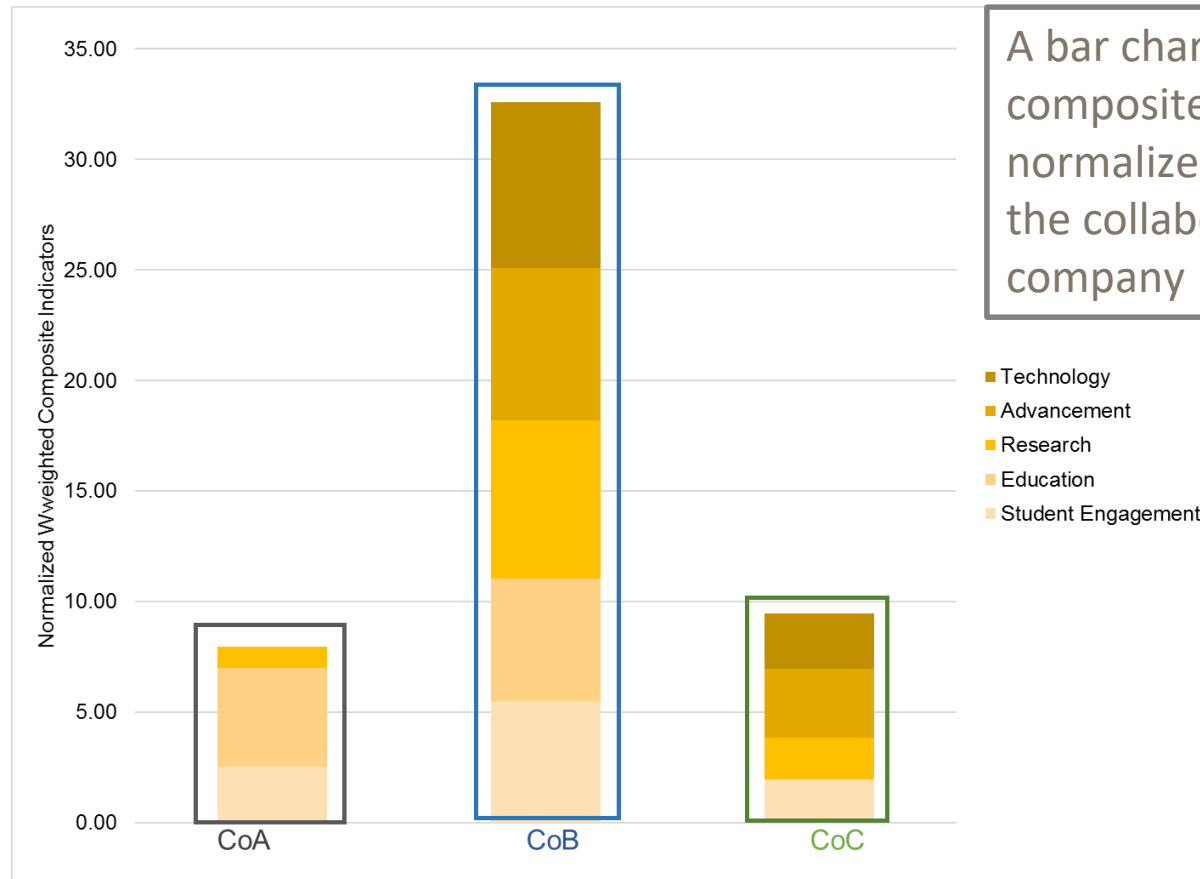
Student Engagement	Education	Research	Advancement	Technology
Career Fairs	Workshops/Seminars	Research Contract	Philanthropic Support	Contract Agreements
Interviews	Guest Speaking/Lectures	Graduate Fellowship	University Initiative Sponsorship	Licensing Agreements
EDU Account	Curriculum Development	Research Grants	Major Gifts	Patents
Internship/Co-op	Support for Proposals for Education	University Initiative Sponsorship	Business Development	
Student Consultant	State Educations Lobbying	Collaborative Research Program Report	Economic Development	
Student Organizations Sponsorships		Master Agreement		
Graduate Fellowship		University Industry Government Collaboration		
University Initiative Sponsorship				
Preferred University				

Increasing Weighting

Underlying Measures

Corporate Scorecard (To-Be Version)

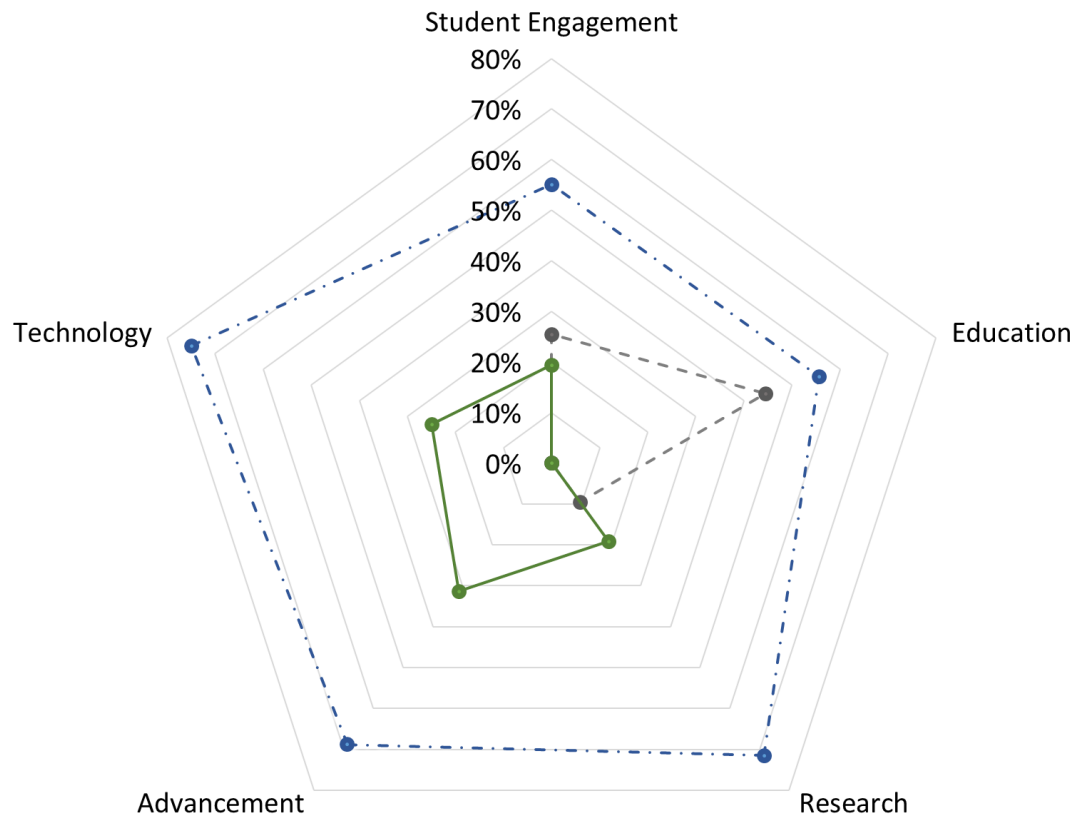
Visualization Example – Bar Chart Decomposition



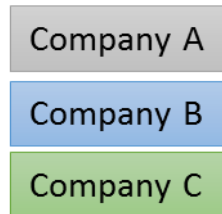
A bar chart with different composite indicators already normalized and weighted, showing the collaboration strength of each company

Corporate Scorecard (To-Be Model)

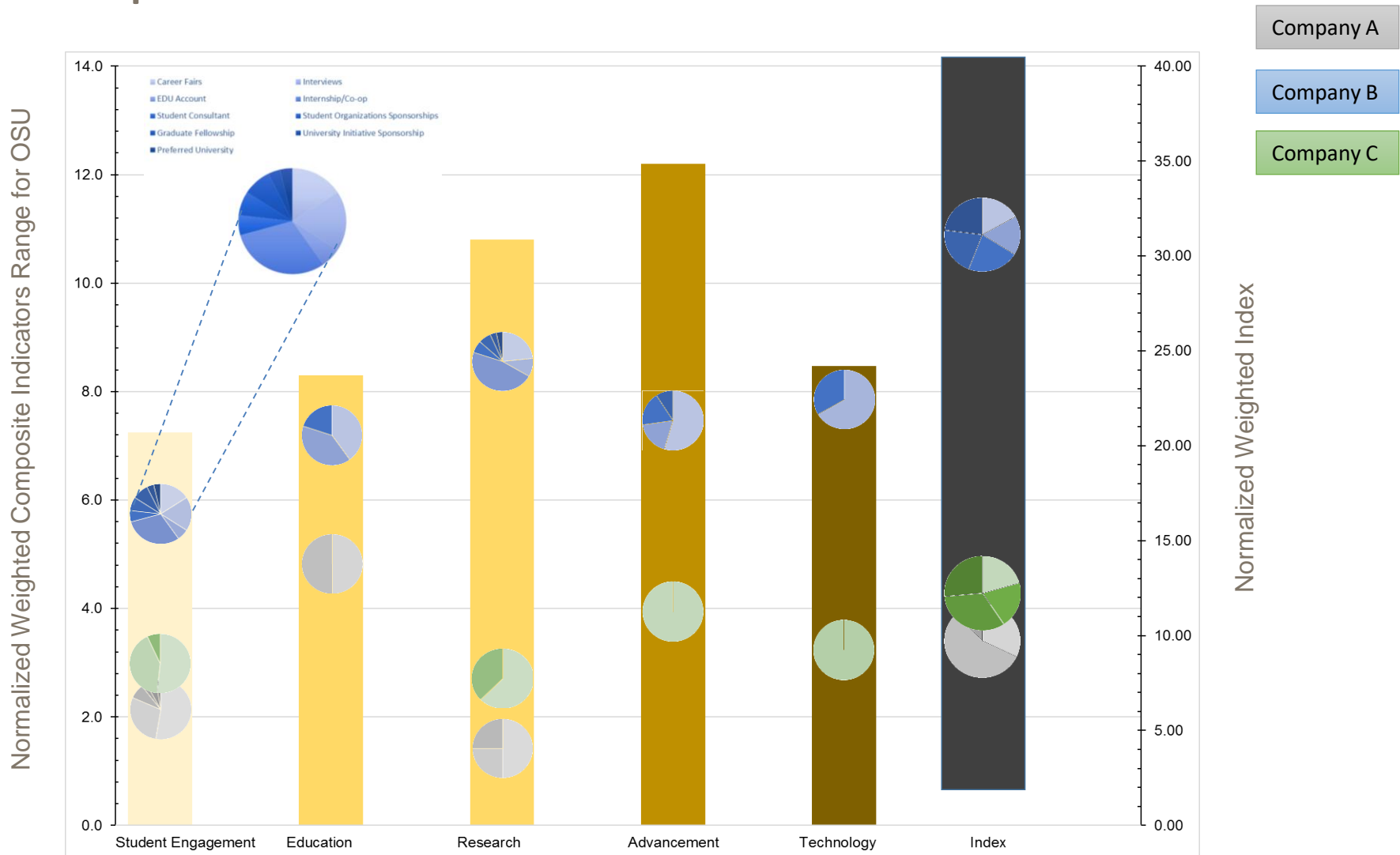
Visualization Example – Spider Diagram Decomposition



A spider diagram with composite indicators as the axes



Corporate Scorecard – KPI Version



Corporate Scorecard Summary (To-Be Model)

- Retain objectives of the current model
- Utilize composite indicators based on OSU mission/goals, holistic engagement, fitness-for-purpose, and thoughtful analytics
- Provide a KPI in the form of an un-capped index that reflects the health of corporate engagement based on a dynamically-adjusting top tier of accounts [e.g. S&P 100]
- Allow displacement of companies in the index based on dynamic valuation
- Update in near real-time sufficient to support tactical and strategic allocation of corporate engagement resources. Know who the top tier partners are at all times in order to drive engagement strategy and tactics.



Corporate Scorecard

Open Discussion

Appendix A – Corporate Scorecard (As-Is Model) 'Premium Scoring'

Corporate Scorecard (As-Is Model)

Revenue by Data Source	Office of Sponsored Programs (OSP) (5 year sum of data)
	Technology Commercialization Office (TCO) (5 year sum of data)
	The Advancement System (TAS) (5 year sum of data)
	Matching Gifts by Employer (5 year sum of data)

Financial Premium Scoring

- \$0-\$250K = 0
- \$250K-\$1M = 1
- \$1M-\$2.5M = 2
- \$2.5M-\$5M = 3
- \$5M + = 4

Corporate Scorecard (As-Is Model)

Dollars Out	Purchasing (5 year sum of OSU spend)
--------------------	--

Purchasing Premium Scoring

- \$0-\$1M = 0
- \$1M-\$10M = 1
- \$10M + = 2

Corporate Scorecard (As-Is Model)

Recruiting	Full Time Hires (5 year sum of data)
	Interns / Co-ops (5 year sum of data)

Hire Premium Scoring

- 0-10 = 0
- 11-30 = 1
- 31-80 = 2
- 81-110 = 3
- 111 + = 4

Corporate Scorecard (As-Is Model)

Non-Dollar	Master Research Agreement Yes(1)/No(0)
	OSU Preferred School Yes(1)/No(0)
	C-Suite OSU Alumni Yes(1)/No(0)
	Affinity Agreement Yes(1)/No(0)
	Suite Lease Yes(1)/No(0)
	Executive Education Yes(1)/No(0)
	OSU Board Membership (Deans level or above) Yes(1)/No(0)
	Consortium Membership / Key Unit Partnerships 1-3(1) 4+(2)

Non-Dollar Premium Scoring

- 1-2 = 1
- 3-4 = 2
- 5-6 = 3
- 7 + = 4