

A close-up photograph of a person's hands holding a custom-built robot. The robot is constructed from grey and white plastic parts, featuring two large black wheels with orange hubs and a camera module with two orange lenses mounted on top. The background is blurred, showing other people in a laboratory or classroom setting.

Center *for*
DIGITAL
INNOVATION

Strategic RoadMap
BUSINESS
Plan



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Table of Contents

Purpose/Scope.....	1
Coursework Assessment.....	2
Competitive Analysis.....	5
Financial Projections	12
Bibliography	16

Purpose/Scope

The Business Plan detailed below follows the overarching “Strategic Roadmap for Southern University’s Centers of Strength Initiative” and nests within it. It details the business case for the Center for Digital Innovation. The Center, like the other four Centers at Southern, will utilize a common design that will link academics, research (innovation), and business partnering. From an academic standpoint, the Center’s primary function will be the development of interdisciplinary programs across colleges – degrees, certifications, and other forms of training that leverage Southern’s infrastructure to meet emerging needs. It is important to note that the Center, while operating within an academic and non-profit construct, has the potential for significant regional economic benefit. Analyses of key elements of this design and the subsequent economic impact form the heart of this plan.

This document reflects a bounded analysis of three key topics pertinent to the launch of Southern University’s Center for Digital Innovation. First, it provides a “Coursework Assessment” that evaluates the current offerings of the Center considering the economic context of Louisiana. Second it conducts a competitive analysis to consider the alternatives that students may consider when making a decision regarding attending Southern and pursuing a degree within the Center. Finally, a high level financial projection is included to ascertain the economic benefit derived from the Center when its outcomes achieve their projected result.

While traditional business plans are much larger and provide additional insights, the topics covered represent the priority topics Southern requires at this current point in time. As the Center moves forward, additional analysis and evaluation will be required to maximize the benefits to the state of Louisiana.

Coursework Assessment

This Business Plans commences with a Coursework Assessment to impartially gauge the applicability of the programs of study offered within the Center for Digital Innovation. Knowing what strengths, gaps, and challenges face the Center is crucial to charting an effective way forward. To conduct this Coursework Assessment, a review of the Center’s majors was performed considering the anticipated 4 & 5 Star Jobs which align to those majors, as described below:

Step #1: Center’s Majors mapped to Baton Rouge area 4 & 5 Star Jobs - The Louisiana Workforce Commission’s “4 & 5 Star Jobs” present an impartial, official view of forecasted job opportunities (“Long Term Projections for All Occupations to 2024”) for the broader state as well as specific regions within the state. This data set was filtered for as follows:

- 4 & 5 Star jobs (removal of all lower ranked jobs)
- 4 & 5 Star jobs which hire from candidates with the Center’s degree offerings. To ascertain appropriate majors, US Department of Labor’s Bureau of Labor Statistics, Occupational Outlook Handbook’s “How to Become One” educational recommendationsⁱ provided primary majors that align with various occupations.
- The Baton Rouge area (“Regional Labor Market Area 2”)
- Jobs whose “most significant source of education or training” equals a Bachelor’s degree or higher (removal of all jobs requiring less than a Bachelor’s degree)

The table below contains jobs which fit the criteria above and align to Computer Science majors:

Stars	Occ. Code	Occupational Title	Dept of Labor, Bureau of Labor Statistics, Occupational Outlook Handbook Identified Majors	2014 Estimate	2024 Projected	10 Year Growth	Annual New Growth	Annual Replacement	Annual Total Openings
5	409743	Computer and Information Systems Managers	Any computer or information science related field	550	650	100	10	10	20
5	15-1121	Computer Systems Analysts	Any computer or information science related field	770	940	170	20	10	30
5	15-1122	Information Security Analysts	Any computer or information science related field	240	310	70	10	0	10
5	15-1131	Computer Programmers	Any computer or information science related field	740	840	100	10	20	30
5	15-1132	Software Developers, Applications	Computer Science, Software Engineering, Math	340	540	200	20	10	30
5	15-1133	Software Developers, Systems Software	Computer Science, Software Engineering, Math	280	490	210	20	0	20
5	15-1142	Network and Computer Systems Administrator	Any computer or information science related field	1,000	1,160	160	20	10	30
4	15-1141	Database Administrators	Any computer or information science related field	100	130	30	0	0	0
4	15-2031	Operations Research Analysts	Engineering, Computer Science, Analytics, Math	760	1,040	280	30	10	40

The table below contains jobs related to Management/Marketing disciplines (same filtering):

Stars	Occ. Code	Occupational Title	Dept of Labor, Bureau of Labor Statistics, Occupational Outlook Handbook Identified Major	2014 Estimate	2024 Projected	10 Year Growth	Annual New Growth	Annual Replacement	Annual Total Openings
5	11-1021	General and Operations Managers	Business Administration	6,980	7,820	840	80	180	260
5	11-2021	Marketing Managers	Marketing	270	300	30	0	10	10
5	11-2022	Sales Managers	Marketing	840	910	70	10	20	30
5	11-3031	Financial Managers	Finance/Accounting/Economics/Business Administration	1,380	1,500	120	10	30	40
5	11-3051	Industrial Production Managers	Business Administration or Industrial Engineering	400	430	30	0	10	10
5	11-3061	Purchasing Managers	Not Specified	230	250	20	0	10	10
4	11-3111	Compensation and Benefits Managers	HR, Business Administration, Management, Finance	80	90	10	0	0	0
5	11-3121	Human Resources Managers	HR, Finance, Management, Education, IT	440	490	50	10	10	20
5	11-3131	Training and Development Managers	HR, Business Administration	190	230	40	0	10	10
5	11-9111	Medical and Health Services Managers	Health Admin/Mgmt, Nursing, PH Admin, Business Admin	610	670	60	10	20	30
4	11-9151	Social and Community Service Managers	Social Work, Urban Studies, Public or Bus. Admin, Health	690	740	50	0	20	20
4	13-1041	Compliance Officers	Not Specified	1,010	1,090	80	10	10	20
4	13-1051	Cost Estimators	Engineering, Business, Finance	820	880	60	10	20	30
5	13-1071	Human Resources Specialists	HR, Business	1,060	1,140	80	10	30	40
4	13-1081	Logisticians	Business, Systems Engineering, Supply Chain Mgmt	170	200	30	0	0	0
5	13-1111	Management Analysts	Business, Mgmt, Econ, Accnt, Finan, Poly Sci, Psy, CIS/MIS	910	1,100	190	20	10	30
4	13-1151	Training and Development Specialists	HR, Education, Instruc Design, Bus Admin, Indust Psych	510	570	60	10	10	20
5	13-1161	Market Research Analysts, Marketing Specialists	Marketing, Statistics, Math, Comp Sci, Bus Admin	450	550	100	10	10	20
4	13-2031	Budget Analysts	Accounting, Statistics, Finance, Business, Pub Admin, Econ.	190	200	10	0	10	10
4	13-2051	Financial Analysts	Accounting, Finance, Economics, Math, Statistics	170	190	20	0	0	0
5	13-2052	Personal Financial Advisors	Finance, Econ, Accounting, Business, Law, Math	390	490	100	10	10	20
4	41-3031	Securities, Commodities, Financial Services Sales Agents	Not Specified	420	450	30	0	10	10
4	41-4011	Sales Representatives, Wholesale/Manufacturing/Tech/Scien.Products	Not Specified	600	630	30	0	10	10

Step #2: Scoring System (means of scoring of majors based upon jobs) – With relevant majors mapped to specific job titles it becomes possible to assess the total number of roles available in the Baton Rouge areas for each Center for Digital Innovation major using the Louisiana Workforce Commission’s forecast data. Many roles will draw from multiple majors, so to understand the scale of total jobs available for each major, the total number of jobs was replicated in each applicable major. Of note – this means that the following individual columns do not add up to the total number of jobs available for Southern’s graduates. Instead, since candidates with differing majors may each be viable for a type of job. Totaling up all job opportunities then gives insight into how to evaluate majors against each other for marketplace viability. The table below provides the total jobs available for the Computer Science major:

Stars	Occupational Code	Occupational Title	Dept of Labor, Bureau of Labor Statistics, Occupational Outlook Handbook Identified Majors	Annual Total Openings	Computer Science
5	409743	Computer and Information Systems Managers	Any computer or information science related field	20	20
5	15-1121	Computer Systems Analysts	Any computer or information science related field	30	30
5	15-1122	Information Security Analysts	Any computer or information science related field	10	10
5	15-1131	Computer Programmers	Any computer or information science related field	30	30
5	15-1132	Software Developers, Applications	Computer Science, Software Engineering, Math	30	30
5	15-1133	Software Developers, Systems Software	Computer Science, Software Engineering, Math	20	20
5	15-1142	Network and Computer Systems Administrators	Any computer or information science related field	30	30
4	15-1141	Database Administrators	Any computer or information science related field	0	0
4	15-2031	Operations Research Analysts	Engineering, Computer Science, Analytics, Math	40	40
Total Possible Jobs					210

The table below provides the total jobs available for Management/Marketing majors:

Stars	Occ. Code	Occupational Title	Dept of Labor, Bureau of Labor Statistics, Occupational Outlook Handbook Identified Major	Annual Total Openings	Management	Marketing
5	11-1021	General and Operations Managers	Business Administration	260	260	
5	11-2021	Marketing Managers	Marketing	10		10
5	11-2022	Sales Managers	Marketing	30		30
5	11-3031	Financial Managers	Finance/Accounting/Economics/Business Administration	40	40	
5	11-3051	Industrial Production Managers	Business Administration or Industrial Engineering	10	10	
5	11-3061	Purchasing Managers	Not Specified	10	10	10
4	11-3111	Compensation and Benefits Managers	HR, Business Administration, Management, Finance	0	0	
5	11-3121	Human Resources Managers	HR, Finance, Management, Education, IT	20	20	
5	11-3131	Training and Development Managers	HR, Business Administration	10	10	
5	11-9111	Medical and Health Services Managers	Health Admin/Mgmt, Nursing, PH Admin, Business Admin	30	30	
4	11-9151	Social and Community Service Managers	Social Work, Urban Studies, Public or Bus. Admin, Health	20	20	
4	13-1041	Compliance Officers	Not Specified	20	20	20
4	13-1051	Cost Estimators	Engineering, Business, Finance	30	30	
5	13-1071	Human Resources Specialists	HR, Business	40	40	
4	13-1081	Logisticians	Business, Systems Engineering, Supply Chain Mgmt	0	0	
5	13-1111	Management Analysts	Business, Mgmt, Econ, Acct, Finan, Poly Sci, Psy, CIS/M	30	30	
4	13-1151	Training and Development Specialists	HR, Education, Instruc Design, Bus Admin, Indust Psych	20	20	
5	13-1161	Market Research Analysts, Marketing Specialists	Marketing, Statistics, Math, Comp Sci, Bus Admin	20	20	20
4	13-2031	Budget Analysts	Accounting, Statistics, Finance, Business, Pub Admin, Ec	10	10	
4	13-2051	Financial Analysts	Accounting, Finance, Economics, Math, Statistics	0		
5	13-2052	Personal Financial Advisors	Finance, Econ, Accounting, Business, Law, Math	20	20	
4	41-3031	Securities, Commodities, Financial Services Sales Agents	Not Specified	10	10	10
4	41-4011	Sales Representatives, Wholesale/Manufacturing/Tech/Scien Products	Not Specified	10	10	10
Total Possible Jobs				650	610	110

Key Summary Takeaways

- *Number of Different Job Types:* A total of 36 relevant types of 4 & 5 Star Jobs were identified: 9 for Computer science majors, while 23 were identified for Management and Marketing majors.
- *Total Number of Jobs:* Annually, 860 individual jobs aligned to Center for Digital Innovation majors are projected to be available per year in the Baton Rouge area. 210 individual jobs aligned to Computer Science majors are projected to be available per year in the Baton Rouge area, while 650 for Management and Marketing majors.
- *Alignment of Jobs:* All of the 4 & 5 Star Jobs identified as aligning to Computer Science are “highly aligned” – meaning that the role requires a Bachelor’s degree specifically in a Computer-related discipline. Similarly, 19 of the 23 jobs identified for Management and Marketing majors are “highly aligned.”

Strengths

- Strong job growth exists for all majors in the Center for Digital Innovation. Most current forecasts rank Computer Science-related degrees as being one of the top 10 most in demand majors for number of jobs.ⁱⁱ
- Southern students graduating from the Center will likely have a range of options/areas of focus to select due to the utility of these majors in today’s digital economy

Challenges/Issues

- Comparatively, the Baton Rouge economy lags nationwide demand for Computer Science majors. This is a reflection of the Baton Rouge economy, not Computer Science itself.
- Based on the high demand for Computer Science majors in the broader US economy, Baton Rouge may see a “brain drain” as talented graduates opt to leave the area for better pay and career prospects.

Opportunities

- Southern, with its strong Computer Science program, may be able to create a “magnet” ecosystem which attracts employers to the Baton Rouge area. Strategic cultivation of key relationships

(government, industry, etc.) coupled with quality graduates can serve as a boon to the broader region's economy.

- Based upon market demand, there may be room for additional majors within the Computer Science arena. Again, coordination with prospective employers and other market-facing stakeholders is key to ensuring that any additional offerings match employment demand signals, student interests, and institutional capability.

Competitive Analysis

Academia, to its credit, places a strong value on collaboration. For purposes of assessing the academic “market” and options that prospective students may choose, however, it is imperative to identify and understand the available alternatives. The following analysis seeks to provide insight into who Southern’s key alternatives or “competitors” are, the characteristics they possess, and what insights Southern can draw from this understanding. The analysis assesses the competition from multiple perspectives, since customers employ a range of factors in making decisions. Of note – competition does not equate to antagonism – competitors often collaborate to achieve mutually beneficial results.

1) Who are Southern’s Competitors?

The first step in understanding the overall context in which Southern’s Center for Digital Innovation operates is to define who the key competitors are. This analysis will attempt to answer the question from the following vantage points – competitors as defined by Southern’s customer’s recent behavior, competitors from a broader geographic perspective, competitors who have been previously identified, and HBCU competitors in the region. Given that the Center for Digital Innovation’s “product” offerings are the majors offered, the analysis will examine which majors are offered by the various schools.

- a) **Current Customer Insights:** Competitive markets are dynamic environments as evidenced by customer preferences changing over time. Understanding current customer decision-making, however, serves as a critical starting point in assessing the competitive landscape. Only when we know the current status can we understand the broader context and emerging trends. While Southern does not possess current customer insights in the form of student surveys or Admissions data indicating other schools that applicants are considering, securing this information for ongoing insights is highly recommended.

- b) **Competitive Landscape:**

Beyond immediate customer data, an understanding of the broader “universe” of competitors is required. While technically any training program, in any location, may represent a competitor, most colleges operate in one or more “spheres” with like institutions. For Southern University’s Center for Digital Innovation, this analysis will look at four different spheres – schools within Louisiana, previously identified “peer” institutions, other regional HBCU institutions, and non-traditional competition.

- i. **Louisiana Competitors:** There are 65+ degree-granting institutions in Louisiana, but this analysis excludes community colleges, for profits, and smaller/non-competitive institutions.

The table below displays the social science related offerings from these institutions

Identified Competitor Institution	Enrollment	Tuition	Bachelor's Degrees							Graduate Degrees					
			BS - CS	BS - Comp. En	BS CS - Cyber	CS - Scientifi	BS CS - MA	BS CS - IS	BS - IT	MS -CS	MS - Bioinfor	MS - Biotechnol	MS - MIS	MS - Soft. Eng.	
Louisiana State University (LSU)	31414	\$ 10,758	Multiple	✓							Multiple				
Grambling State University	4863	\$ 7,371	✓												
Louisiana Tech University (Ruston)	12694	\$ 5,553	Multiple	*	✓						Multiple				
McNeese State University (Lake Charles)	7626	\$ 7,474	✓												
Nicholls State University (Thibodaux)	6267	\$ 7,628							✓						
Northwestern State University (Natchitoches)	9819	\$ 5,180							✓						
Southeastern Louisiana University (Hammond)	14499	\$ 5,778	✓							✓	✓				
University of Louisiana at Lafayette	17519	\$ 10,026													
University of Louisiana at Monroe	9115	\$ 8,282	✓							✓					
University of New Orleans	8037	\$ 7,150	✓								Multiple				
Tulane University	13581	\$ 51,010	Multiple								Multiple				
Centenary University (Shreveport)	630	\$ 31,156													
Cornerstone University (Lake Charles)	N/A	\$ 1,950													
Dillard University (New Orleans)	1261	\$ 16,580													
Louisiana College (Pineville)	1126	\$ 13,800	✓												
Loyola University New Orleans	4330	\$ 39,492	Multiple							✓					
University of Holy Cross (New Orleans)	1250	\$ 13,050													
Our Lady of the Lake College	3173	\$ 12,984													
Xavier University of Louisiana	2359	\$ 21,212	✓	✓						✓					
Southern University & A&M College	5438	\$ 8,102			✓	✓	✓	✓	✓	✓					

The table below displays the social science related offerings from these institutions:

State	Identified Competitor Institution	Enrollment	Tuition	BS Admin	BS Mgmt	BS Marktg.	BS MIS	BS Entrepre.	BS Sup Chain	MBA
LA	Louisiana State University (LSU)	31414	\$ 10,758	✓	✓	✓	✓			✓
LA	Grambling State University	4863	\$ 7,371		✓	✓				
LA	Louisiana Tech University (Ruston)	12694	\$ 5,553							
LA	McNeese State University (Lake Charles)	7626	\$ 7,474	✓	✓	✓		Minor		✓
LA	Nicholls State University (Thibodaux)	6267	\$ 7,628	✓	✓	✓				✓
LA	Northwestern State University (Natchitoches)	9819	\$ 5,180	✓	✓		✓			
LA	Southeastern Louisiana University (Hammond)	14499	\$ 5,778	✓	✓	✓			✓	✓
LA	University of Louisiana at Lafayette	17519	\$ 10,026		✓	✓				✓
LA	University of Louisiana at Monroe	9115	\$ 8,282	✓	✓	✓				✓
LA	University of New Orleans	8037	\$ 7,150	✓	✓	✓				✓
LA	Tulane University	13581	\$ 51,010		✓	✓		Minor		✓
LA	Centenary University (Shreveport)	630	\$ 31,156	✓						✓
LA	Cornerstone University (Lake Charles)	N/A	\$ 1,950							
LA	Dillard University (New Orleans)	1261	\$ 16,580	✓	✓	✓				
LA	Louisiana College (Pineville)	1126	\$ 13,800	✓						
LA	Loyola University New Orleans	4330	\$ 39,492	✓	✓	✓				✓
LA	University of Holy Cross (New Orleans)	1250	\$ 13,050	✓						
LA	Our Lady of the Lake College	3173	\$ 12,984							
LA	Xavier University of Louisiana	2359	\$ 21,212	✓						
LA	Southern University & A&M College	5438	\$ 8,102		✓	✓			*	✓

Takeaways

- Competition within Louisiana in the Computer Sciences is quite concentrated. LSU, Louisiana Tech, Tulane, UNO, Loyola and Xavier are the only institutions offering multiple Bachelors or Masters programs beyond the traditional IT/CS offerings. Of these, LSU and Louisiana Tech are the only schools in Southern's price band.
- Given its charter, its status as a national research institution, and the state resources directed its way, there is no question that the largest and best funded institution in the state is LSU. Due to the disparity

in funding, it is more advantageous to Southern to look for collaborative partnership opportunities or development of distinct market niches.

- *Geographically, Southern’s location presents a key opportunity – the Baton Rouge labor market area (as defined by the Louisiana Workforce Commission) is, and will be, one of the most economically vibrant sectors in the State. Linking Southern with Baton Rouge institutions and opportunities is something that most other universities in the state cannot effectively do. Marketing to students who would otherwise attend other state schools in other regions of Louisiana may prove fruitful due to the economic benefits of Baton Rouge. Southern’s geographic location in the relatively healthy Baton Rouge economy, coupled with partnerships/initiatives may prove to be unique differentiators that attract students that might otherwise attend LT.*

- ii. HBCU Competitors: One of Southern’s distinctions is its status as an HBCU institution. However, this is not a differentiating advantage because there are over 100 HBCUs in the US. Understanding the landscape of offerings related to Digital Innovation at similar HBCUs in the immediate neighboring geographic area (LA, MS, AL, TX and AR) provides insights for Southern.

The following table captures the Computer Science-related offerings from these institutions:

State	Key Neighboring HBCU Competitor Insti.	Enroll.	Tuition	Bachelor's Degrees							Graduate Degrees						
				BS - CS	BS - Comp. Eng.	BS CS - Cyber	BS CS - Scientific	BS CS - MA	BS CS - IS	BS - IT	MS - CS	MS - Bioinform	MS - Biotechn	MS - MIS	MS - Soft. Eng.		
MS	Mississippi Valley State University	2210	\$ 3,114	✓									✓				
LA	Xavier University (New Orleans)	2366	\$ 21,212	✓	✓					✓							
AL	Tuskegee University	2485	\$ 19,210	✓						✓	✓	✓					
AR	University of Arkansas at Pine Bluff	2545	\$ 10,740	✓								✓					
MS	Alcorn State University	2911	\$ 6,720	✓							✓			✓			
LA	Grambling State University (Grambling)	3583	\$ 7,371	✓													
AL	Alabama A&M University	4496	\$ 17,738														
AL	Miles College	4638	\$ 10,632							✓	✓						
AL	Alabama State University	4764	\$ 16,156	✓													
TX	Texas Southern University	6696	\$ 13,740	✓								✓					✓
TX	Prairie View A&M University	6923	\$ 22,272	✓	✓							✓					✓
MS	Jackson State University	7475	\$ 17,494	✓	✓							✓					
FL	Florida A&M University (Tallahassee)	8128	\$ 26,403	✓						✓							✓
LA	Southern University & A&M College (BR)	5438	\$ 8,102			✓	✓	✓	✓	✓	✓						

The table below displays the Management/Marketing-related offerings from these institutions:

State	Key Neighboring HBCU Competitor Insti.	Enrollmen	Tuition	Relevant Degrees Offered								
				BS Admin	BS Mgmt	BS Marktg.	BS MIS	BS Entrepre.	BS Sup Chain	MBA		
MS	Mississippi Valley State University	2210	\$ 3,114	✓								✓
LA	Xavier University (New Orleans)	2366	\$ 21,212									
AL	Tuskegee University	2485	\$ 19,210	✓	✓	✓					✓	
AR	University of Arkansas at Pine Bluff	2545	\$ 10,740	✓								
MS	Alcorn State University	2911	\$ 6,720	✓								✓
LA	Grambling State University (Grambling)	3583	\$ 7,371		✓	✓	✓					
AL	Alabama A&M University	4496	\$ 17,738	✓	✓	✓			✓		✓	✓
AL	Miles College	4638	\$ 10,632	✓	✓							
AL	Alabama State University	4764	\$ 16,156		✓	✓	✓					
TX	Texas Southern University	6696	\$ 13,740		✓	✓	✓					✓
TX	Prairie View A&M University	6923	\$ 22,272		✓	✓	✓					✓
MS	Jackson State University	7475	\$ 17,494	✓	✓	✓			✓			✓
FL	Florida A&M University (Tallahassee)	8128	\$ 26,403	✓								✓
LA	Southern University & A&M College (BR)	5438	\$ 8,102		✓	✓					*	✓

Takeaways:

- Nearly all schools in this group offer both Bachelors and Master’s degrees in Computer Science. Viewed at that basic level, these programs are the “price of admittance” for those institutions seeking to compete with a basic Computer Science program.
- Southern’s undergraduate Computer Science emphases appear to be a unique and potentially differentiating advantage over all other schools in this sector. No other institution provides any degree or emphases in Cyber, Scientific, or Mobile Applications. While student/market demand must be examined to fully ascertain the benefit, positionally, Southern has a strength that no other regional HBCU institution currently possesses.
- Absent customer survey data, it is unclear, however, whether students view an emphasis (versus a stand-alone major) as sufficient to drive attendance at SU. One option is to examine the potential for elevating Cyber, Scientific and/or Mobile Applications into full majors. Alternatively, creating significant partnerships and endorsements around these programs may solidify their status and serve as a draw for students with these specific interests.
- The one technical discipline that Southern lacks centers around Computer or Software Engineering. This is an area for potential partnership with Southern’s Electrical Engineering program to either co-brand or launch a new major, should market demand exist.
- If market demand warrants it, the more business-centric Bachelor’s in Management Information Systems may be an opportunity to unite Southern’s strengths in Computer Science and Business. Multiple other schools offer this degree program.
- Over the last 20 years the arena of marketing has changed dramatically with the rise of digital platforms. Southern’s marketing program reflects these changes, but exploration of whether an emphasis or degree in Digital Marketing may enhance the suite of offerings.
- At the graduate level, multiple Master’s degrees in more specific areas have emerged among competitor institutions, though no one appears to have created a significant advantage at this juncture. Southern may have an opportunity to expand its graduate programs, based upon market demand and its strong foundation at the undergraduate level.

iii. Previously-Identified Peer Institutions – SUBR possesses a 2011 report identifying “Peer” institutions, based upon criteria including enrollment similarity, land grant status, HBCU status, and number of PhD programs. There is some overlap with previous portions of this competitive analysis, but the institutions are included here as presented in 2011 to provide further context and comparison.

The following table captures the Computer Science-related offerings from these institutions:

State	Identified Competitor	Enroll.	Tuition	Bachelor's Degrees							Graduate Degrees						
				BS - CS	BS - Comp. Eng	BS CS - Cyber	CS - Scientifi	BS CS - MA	BS CS - IS	BS - IT	MS - CS	MS - Bioi	MS - Bioti	MS - MIS	MS - Cybe	MS - Soft. Eng	MS - GIS
TX	Prairie View A&M	6,923	\$ 23,278	✓	✓						✓				✓		
TX	Texas Southern	6,696	\$ 13,740	✓							✓				✓		
LA	U of Louisiana-Monroe	9,115	\$ 8,282	✓						✓							
VA	Norfolk State University	6,281	\$ 16,920	✓						Multiple	✓				✓		
AL	Alabama A&M	4,496	\$ 17,738														
IN	Indiana State University	13,565	\$ 18,876	✓	✓						Multiple						
TX	Texas A&M – Corpus Ch	12,174	\$ 18,258	✓							✓						✓
VA	Virginia State University	5,634	\$ 19,002	✓	✓						✓						
TN	Tennessee Tech	10,492	\$ 15,864	Multiple	✓	✓	✓				✓						
TX	Texas A&M - Kingsville	8,300	\$ 20,356	✓						✓	✓						
LA	Southern U & A&M College	5,438	\$ 8,102			✓	✓	✓	✓		✓						

The table below displays the Management/Marketing-related offerings from these institutions:

State	Identified Competitor Institution	Enrollm	Tuition	BS Admin	BS Mgmt	BS Marktg.	BS MIS	BS Entrepre.	BS Sup Chain	MBA
TX	Prairie View A&M	6923	\$ 23,278		✓	✓	✓			✓
TX	Texas Southern	6696	\$ 13,740		✓	✓	✓			✓
LA	U of Louisiana-Monroe	9115	\$ 8,282	✓	✓	✓				✓
VA	Norfolk State University	6281	\$ 16,920		✓	✓	✓	✓		
AL	Alabama A&M	4496	\$ 17,738	✓	✓	✓		✓	✓	✓
IN	Indiana State University	13565	\$ 18,876	✓	✓	✓	✓		✓	
TX	Texas A&M – Corpus Ch	12174	\$ 18,258	✓	✓	✓	✓			✓
VA	Virginia State University	5634	\$ 19,002		✓	✓	✓			
TN	Tennessee Tech	10492	\$ 15,864		✓	✓	✓		✓	✓
TX	Texas A&M - Kingsville	8300	\$ 20,356	✓	✓	✓	✓			✓
LA	Southern University & A&M College	5438	\$ 8,102		✓	✓			*	✓

Takeaways:

- *Most of the previously identified takeaways (see Regional HBCU Competitors) apply to these institutions as well.*
- *Southern continues to hold an advantage in the arena of its Computer Science emphases, but it is worth noting that Tennessee Tech has followed a similar path and offers multiple emphases as well. Their offerings include Cyber Security, Data Science, Parallel, Distributed & High Performance, and Software and Scientific Applications. Because of the similarity in their concentrations to SU’s, they should be viewed as a key competitor.*
- *There continues to a market presence for Computer Engineering programs (as with regional HBCU competitors), reemphasizing the possibility of SU needing to unite the Computer Science and Engineering capabilities to address this gap.*
- *Management Information Systems is the key gap in Business disciplines and should be evaluated to determine if sufficient market demand for this major warrants SU offering it.*

iv. Non-Traditional Competitors – while generally considering other traditional four-year colleges as Southern’s primary competitors, several other options are available to learners seeking training:

Reduction of Requirements: In a recent thought pieceⁱⁱⁱ, Wired magazine has forecasted that coding and possibly other computer science-related jobs are becoming “blue collar” types of jobs. As industry pressures force cost cutting moves, employers are increasingly moving away from traditional Computer Science majors and hiring employees with lesser skills. These employees command less salary in the market, and can be adequately trained to perform basic coding and other computer functions. This represents a key threat to Southern and other degree granting institutions that offer Computer Science Bachelors and Masters degrees. While many students desire this sort of education, market shifts cannot be ignored as they will impact a portion of the customer base. For instance, IBM recently announced that it is looking to bring a high tech job training program to the Baton Rouge area which will provide skills training to high school students. Given that meetings with representatives of the Louisiana Community and Technical College System are planned,^{iv} Southern would do well to proactively seek partnerships with IBM for higher skilled positions and potentially look to new offerings to meet market demand (even if this means certificates/etc.)

“Boot Camp” training programs: as society continues to struggle with the cost-benefit analysis of traditional educational models, “boot camps,” module-based learning and workforce education style education will continue to rise. Southern needs to consider how to partner to deliver its brand into the market in these arenas and gain revenue/market share without abandoning its traditional model.

Online education: For traditional “brick and mortar” colleges, online options represent both an opportunity and a competitive alternative. More than 28% of higher education students in the US now take at least one online course as part of their studies. That represents a growth trajectory that has continued for 13 straight years^v. Online education does not have as great a presence in bachelor-level computer science type degrees – instead tending to focus on master’s level programs in Computer Science.

2) **SWOT analysis**

The following analysis focuses on the strengths, weaknesses, opportunities and threats (SWOT) that Southern’s Center for Informed Learning faces:

<p><u>Strengths</u> <i>Computer Science</i> – a strength/ advantage over many other schools <i>People</i> – leadership, faculty, staff <i>Location</i> – positioning in BR <i>History/Track Record</i> – experience, reputation & institutional knowledge <i>Relative Price</i> – inexpensive option compared to many alternatives <i>HBCU</i> – differentiating advantage</p>	<p><u>Weaknesses</u> <i>Many emphases</i> – market specialization may demand more specific majors <i>Cost/Time Commitment</i> – significant barrier for many students <i>Organizational Inertia</i> – difficult to rapidly adjust to a dynamic market</p>
<p><u>Opportunities</u> <i>Head Start in CS specialization</i>– most schools only offer generic CS degrees <i>Baton Rouge</i> – anticipated growth and potential for high demand <i>Computer Engineering</i> – market gap <i>Partnerships</i> – Intelligence Community, industry, foreign schools <i>Economic Growth</i> – state-wide and national economic growth</p>	<p><u>Threats</u> <i>Reduced demand</i> - Computer Science becoming a “blue collar” job not requiring CS degrees (or perhaps only a certificate) <i>Direct Competitors</i> – LSU, Louisiana Tech, Tennessee Tech <i>Online Education</i> – especially for working professionals & Master’s in Computer Science</p>

3) Competitive Analysis Key Takeaways

- a) Computer Science is a strength of Southern's and analysis of the competitive environment indicates that SU has some capabilities in this arena that relatively few other institutions of its size possess.
- b) Building upon this strength by evaluating whether additional Bachelor's majors (instead of just concentrations) as well as further market-driven Master's degrees may take SU's current strength and built it into a competitive advantage
- c) Several of SU's concentrations (Cyber, Mobile Applications, etc.) can be leveraged to achieve partnerships with industry and foreign institutions
- d) Numerous partnership opportunities exist for Southern which present important means of leveraging the creation of a Center for Digital Innovation for Southern's advantage:
 - i. Intelligence Community (IC) agencies: Federal contracting policies incentivize agencies and contractor firms to partner with HBCU institutions. Southern's Cyber focus is a natural means of building strategic relationships with the National Security Agency, Defense Intelligence Agency, and other IC entities/contractors that have a high demand for Cyber/Computer Science degree holders. A first step would be pursuing security clearances and experience for graduates as well as enhanced partnership agreements with Washington DC-area contracting firms. More strategically, working with the agencies themselves (and the State of Louisiana) around locating certain functions in the Baton Rouge area would further enhance Southern's positioning and the region's economy.
 - ii. LSU – Partnership opportunities to leverage LSU research, technologies and initiatives may benefit SU via enhanced prestige and access to funding sources.
 - iii. Foreign Partnerships – SU's proactive outreach to universities in China has the potential to help create a node in specific areas (perhaps Mobile Applications) where firms partner with Southern and its overseas counterparts to leverage students/graduates to produce their products
 - iv. Sources of patents/technology – creating/enhancing relationships with National Laboratories, Science incubators (i.e. NSF, etc.), government research organizations (DARPA, etc.) and others will provide ideas and technologies that businesses can be built around
- e) Pay close attention to market dynamics, in particular, the shift away from college graduates performing some coding/Computer Science functions. This is both a risk and an opportunity for Southern. Because it has a head start in specialization, it is better positioned than many schools to deal with a decline in demand for general computer science graduates performing basic functions. Diligence, and potentially increased specialization in majors/focus, as well as the aforementioned partnerships will be key to surviving this disruptive change.

Financial Projections

Projecting the fiscal impact of any new entity is an inexact science. However, by clearly capturing the detailed costs and carefully/conservatively projecting the anticipated financial benefit, an overall measure of the impact can be obtained.

Center Cost Structure

The following items represent the identified costs associated with operating the Center:

Staffing: \$350,000. For staffing, the Center will be very streamlined, relying upon minimal staffing focused on driving economic impact, as described below:

- Center Director – key leaders tasked with building partnerships across stakeholder groups both within and outside of Southern. Oversees engagement activities, research projects and grants and partnerships.
- Project/Engagement Manager – responsible for coordinating projects and facilitating events designed to drive economic growth through the Center’s initiatives
- Research Associates – graduate student roles, performing assigned research into new opportunities, partnerships, supporting grant writing and center initiatives
- Administrative Assistant – office management, scheduling, coordination, administrative support to Center staff and participation in events/initiatives

Offices/Facilities: \$0. The Center will leverage existing SUBR infrastructure, enabling a highly streamlined operational structure. For office facilities, the Center will be located on Southern’s main campus and utilize currently underutilized space. These offices will enable close collaboration between faculty, staff, students and external stakeholders while keeping overhead costs low.

Marketing/Advertising/Outreach/Partnerships: \$50,000. While various forms of free advertising (news releases, speaking engagements, etc.) are useful, achieving the needed return on investment involves active marketing and outreach initiatives. The forms these activities take will vary depending upon both opportunity and need, but may include sponsoring events, paying for high profile speakers/luminaries, marketing and financial participation in initiatives that raise the Center’s profile.

Additional costs: \$20,000. Office operations, travel and miscellaneous needs

Total Annual Operating Budget: **\$420,000**

Regional Economic Benefit

An estimated forecast for the economic impact of the Center for Digital Innovation can be created by evaluating several key factors:

Baton Rouge’s need for increased economic activity: Recent reports indicate that the Baton Rouge area has performed significantly below the US large metropolitan area average from 2010-2015^{vi}. Gross Metropolitan Product (GMP) for the Baton Rouge market ranks in the bottom 20 (out of 100) with economic growth of only 3.2% over the five-year period. Further, hiring by firms 0-5 years old shrank by 12.7% during the period, indicating weakness in entrepreneurial ventures. For most other metropolitan areas in the US, these years following the economic downturn of 2007-2008 saw significantly more growth. While there are positive indications of future growth in the region (see Louisiana Economic Development forecasts), the region lags its peers nationwide.

Factoring in Impact

(Note: Economic benefits of business-related degrees have been captured in the Business Plan for the Center for Social Entrepreneurship. To avoid “double-counting” benefits, incorporation of their impact is not included in this Plan. Please reference the Center for Social Entrepreneurship Business Plan for that information.)

The Center as an Economic Engine: Data shows that across the United States, demand for Computer Science-related graduates far outstrips supply.^{vii} The result of this market imbalance is significant – 263,586 unfilled jobs valued at \$20.1 billion annually.^{viii} Given the lack of supply, this represents a significant opportunity for Southern to proactively reach out to attract employers, start-ups, and potentially expand its output of computer science graduates. This is a key role that the Center for Digital Innovation can play.

Given the room for economic growth in the Baton Rouge area, a minor increase in digital-related jobs will have a significant multiplier impact on the area's employment and Gross Metropolitan Product. It has been estimated that each high-tech job creates five additional jobs, and two of the five jobs are professional (lawyers, doctors, etc.).^{ix} For Baton Rouge in 2016, the area's GMP was \$51.6 billion^x. Accordingly, for every 0.1% increase in GMP, the region will accrue an additional \$51.6 million in GMP.

By creating the Center for Digital Innovation, SUBR will facilitate and enhance an environment in the Baton Rouge area that will enable and attract digitally-focused ventures. These sorts of ventures have been shown to stimulate regional economic development^{xi}. Determining the amount of economic activity directly linked to the Center is an inexact science, but the following illustrates potential impact.

If Southern launches the Center and is successful in creating an environment of digital innovation, new ventures and relocating firms will be drawn to the area. We forecast that the Center can foster and facilitate creation of 25 additional computer science jobs per year (based upon increased output addressing market demands). According to the Department of Labor, software developers earn an average salary of \$100,690/year, which would translate to an average GMP of \$2,517,250 within five years. Based upon the 5x multiplier effect, and assuming a conservative average salary of \$50,000 for each additional job generated via the multiplication effect (conservative given that 2 of 5 are anticipated to be professional roles), an annual boost to the Baton Rouge economy of \$12,586,250 is forecast. Over the next five years, a total of 125 new computer science roles with combined GMP impact of \$63 million would be an approximate increase of 0.122% to the area's GMP by 2022.

A 0.122% increase in the area's BMP translates to noteworthy financial impacts to the state. Total projected income tax revenue (based upon a net 3% tax rate) would be \$1,890,000 by 2022. Further, these additional jobs would drive significant sales tax revenue associated with their participation in the local economy.

The Center's creation of an Economic Ecosystem: As part of the aforementioned BMP increase, it is anticipated that many additional four and five star jobs would be created. As these are in addition to the current Louisiana Economic Development forecasts, the region stands to secure additional gains due to the establishment of the Center.

The Center as a Focal Point for Federal Contracting: Federal contracting regulations incentivize contractor firms to partner with HBCU institutions. Southern has built a successful foundation in this arena and stands to secure additional university revenue by expanding this focus. The Center for Digital Innovation, in partnership with the Center for Social Entrepreneurship, stands as a natural entry point for engaging IT-focused federal contractors. In particular, Cyber Security focused firms would be natural partners for Southern to pursue.

For Southern University, creation of the Center portends direct economic benefit associated with increased student enrollment and new outside investment. Conservative forecasting based upon market demand and successful initiatives in other universities leads to the following:

- Estimated Tuition Revenue from Increased Student Enrollment/Retention: **\$250,000/year**
 - o Current data^{xii} indicates that the Computer Science student enrollment is at/near 253 FTEs. Extremely strong market demand for Computer Science graduates coupled with enhanced opportunities generated by the Center’s entrepreneurial ecosystem is forecasted to result in the ability to support an additional 50 FTEs (\$5,000/student revenue) within five years
- Estimated Gift Revenue from Increased Donor Development: **\$1,000,000/year**
 - o Advancement efforts centered on Computer Science/IT cater to a donor market segment with some of the greatest giving capacity, especially given the ability of key donors to gift appreciated stock – achieving the dual benefit of avoidance of capital gains taxes and a charitable contribution deduction. As the Baby Boomer generation retires and transitions its wealth, an estimated \$40 trillion is set to change hands within the next few decades. Outreach for giving in support of the Center is conservatively estimated to achieve \$1,000,000/ year if actively pursued
- Estimated Grant Revenue from Increased STEM proposals: **\$1,000,000/year**
 - o Data clearly shows lagging minority hiring in STEM (particularly Computer Science)^{xiii} – thereby also presenting a powerful opportunity to engage with foundations around addressing the deficiency. Southern’s leadership in this arena could achieve significant investment and operating revenue, but is modestly targeted at \$1 million for planning purposes.
- Estimated Local Baton Rouge Increased Corporate Investment: **\$500,000/year**
 - o STEM-related strengths at Southern directly enhance the economic vitality of the Baton Rouge region which will bring direct benefit to existing local businesses. Active solicitation of local partnerships that involve financial investments is targeted at \$500,000 per year for planning purposes.

Return on Academic Investment

Like weather forecasting, identifying the total return on any investment is an inexact science. However, as described above, numerous benefits are derived from establishment of the Center for Digital Innovation. The following table captures the previously identified costs and compares them to the identified benefits, presenting them in a “Return on Academic Investment” structure so decision-makers can readily see payoffs. It should be noted that sales tax benefits were not incorporated into this evaluation, which would only increase the return on investment calculation.

Investment		Return	
- Staffing	\$350,000	- Estimated Income Tax Revenue	\$1,890,000
- Marketing/Ad.	\$50,000	- Tuition Revenue	\$250,000
- Office/Support	\$20,000	- Donor Revenue	\$1,000,000
Total Investment	\$420,000	- Grant Revenue	\$1,000,000
		- Corporate Investment	\$500,000
		Total Return	\$4,640,000
Total Return on Academic Investment	1,104.76%		

The total Return on Academic Investment (Total Return/Total Investment) is calculated to be 1,104.76%. Stated differently, for every \$1 the State of Louisiana invests in this Center, it is forecasted that over \$11

will be returned to the State and University from various sources. Further, this analysis does not incorporate broader economic benefits associated with the initiative.

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