

UTK Faculty Senate Budget and Planning Committee Report to accompany the *Forum on Outsourcing Facts and Figures*

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April 26, 2017

The overall objectives of this report and the associated Forum are:

(i) To provide information about budget implications of possible outsourcing to the UTK/UTIA Faculty, staff and student community

(ii) To provide an independent source of information that the UTK and UTIA Chancellors might find of use in making their decisions once a detailed contract with outsourcing options is available.

The ***specific objective of this report is to consider components of the potential outsourcing of custodial, facilities services, and grounds maintenance which are not taken into consideration*** in the variety of reports on outsourcing benefits that have arisen from the State of Tennessee's Office of Customer Focused Government's Strategies for Efficiency in Real Estate Management (SEREM). The Committee has considered a variety of aspects of outsourcing and this report is a distillation of our analyses. The components included below are not intended to be exhaustive. Our analysis should be viewed, not as quantitatively exact, but as providing a potential set of methods to consider components of the outsourcing decision that have not been extensively discussed.

A major assumption in this report is that the processes by which SEREM has operated have considered in some detail the variety of savings to UTK and the State that might arise from outsourcing. We assume that this process has been exhaustive in identifying potential savings and thus we do not consider here any potential additional savings but **rather instead focus on components of outsourcing impacts that might reduce the potential savings**. Our expectation is that, prior to any formal decision regarding outsourcing is made by the UTK and UTIA administrations, analyses similar to those outlined here will be considered. We note that the decisions about outsourcing in the Knoxville area are expected to be made through joint discussions between Chancellors Cross and Davenport, and their staffs.

At the time of this Forum, there has not been a release of any detailed accounting of potential savings to the campus from outsourcing, since a final agreement with the chosen contractor (JLL) has not been settled. It is our understanding that there will be ongoing discussions with representatives of JLL over the next several months in order to determine the details of any

potential agreement for UTK/UTIA to utilize the agreement for any of the three basic services included. Thus, we do not have a means to include in this report an explicit percentage reduction in savings arising from the components we consider. Our expectation is that the administration will consider the estimation procedures outlined here, utilizing their available data to make these more precise, and then consider whether these and other considerations (many of which have been made by organizations such as United Campus Workers) ameliorate the potential benefits from outsourcing.

Below are some detailed comments about particular factors that could reduce any potential savings from outsourcing:

1. The upfront costs of paying out annual/sick leave that has been accumulated by employees who could either leave UTK or be absorbed by an outsourced firm.

Assumptions:

(i) For any UT employee whose position is replaced due to outsourcing, either they will be hired by JLL or they will leave UT employment.

(ii) All accumulated annual leave will not be transferred and will not be covered by JLL

(iii) All accumulated sick leave will be transferred to and covered by JLL for any employee who moves to a JLL position

Costs: All unused accumulated annual leave is required to be paid at termination, rather than dispersed over the several years as would otherwise have occurred. This implies UT will need to "borrow" the funds upon the start of the JLL contract that would otherwise not have been needed to be paid out at that time. There is an accumulated interest lost to UT due to this "borrowing".

We assume a 4% per year interest rate and a mean time to retirement and/or leaving UT employment for the affected employees of 5 years. The last estimate we are aware of for the total accumulated annual leave for potentially affected employees is \$1.8M. So, in effect, UT would be "borrowing" the interest on this amount for 5 years which totals $0.04 (5) (1,800,000) = \$360,000$. This is a reduction in any savings from outsourcing by approximately this amount.

This calculation could be expanded by assuming some fractional yearly loss of employees and then amortizing the up-front costs of paying out annual leave. This would provide an estimate of yearly reduction in any savings from outsourcing rather than a lump-sum as we have calculated it. Our estimate is assuming a fairly uniform distribution of time to retirement for the affected employees.

2. Consideration of how any potential first-year savings may not be indicative of future year savings

Assumptions:

(i) Any first-year savings to UTK are reduced in future years due to: loss of experienced employees who leave JLL for whatever reason, associated decrease in efficiency of outsourced employees, required additional capital expenditures from lack of maintenance knowledge, and enhanced likelihood of costly events.

(ii) Over time, any reduction in services or increase in time to repair assets lowers expectations from other UT employees about what services can be provided, reducing the likelihood that high quality employees are themselves retained due to a perception that the campus does not care about the quality of services performed.

(iii) It becomes more difficult to attract the highest quality faculty because the campus is perceived as not being highly socially conscious.

Costs: Quantifying these components of reduced savings over time could be estimated through a yearly reduction due to all the above factors of some percentage per year – we here assume a 2% per year reduction. Over a ten-year contract the total savings, assuming a first-year savings of S , would be $10S$ ignoring inflation and simply assuming the same savings each year. With a reduction each year of 2%, the total savings is no longer $10S$ but is the sum

$$\sum_{i=0}^9 S (.98)^i = S \frac{1 - .98^{10}}{1 - .98} = 9.15S$$

3. Costs to the State of a UT employee who previously had health coverage, but loses it and moves to TennCare.

Assumptions:

(i) A fraction of all outsourced employees will not accept a position with JLL

(ii) JLL employees who have not transferred from UTK will not have health insurance benefits and will be required to be covered by TennCare

Assuming 500 employees and 10% do not accept a move to JLL, this means an additional cost to the State (assuming \$7000 per TennCare enrollee) of $50(7000) = \$350,000$ since these individuals would otherwise have been covered by health insurance through UTK. Since about 1.5% of the total State budget is used to fund UTK, this would imply a reduced allocation to UTK of about \$5400. Note that this calculation does not account for the likelihood that employees who initially sign on to work at JLL may leave, and be replaced by employees with no health care benefits, thus costing the State additional funds, and reducing the amount of funding available to support UT.

4. Costs associated with the use of facilities for events in evenings and other times.

Assumptions:

(i) Any academic or athletic activity that takes place outside the normal business hours or on weekends or because of major weather events may incur additional cost, especially if the

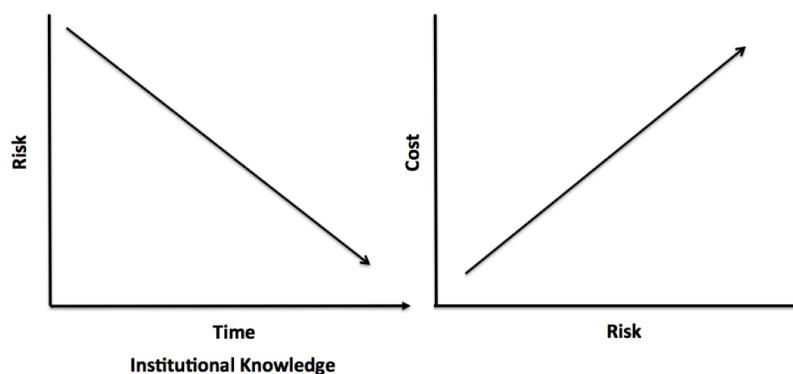
provision of services during such events are not specified and included in the base contract. Specifying the need of service for such events in the base contract may be difficult because whether and how often such events take place in a future academic or athletic season may not be known in advance.

(ii) In comparison to the current system, the outsourced vendor may not be able to provide such services in cases when events need to be organized with short notice, thereby limiting the ability of UT units to organize such events.

Costs: A detail inventory of events and activities held during the non-business hours and weekends currently does not exist for the UT campus. However, one way to approximate this is by considering how much peer institutions are spending. We reached out to one of our peer-institutions that has a similar out-sourcing system in place to inquire whether and how much additional cost the institution is paying its vendor to accommodate extra hour costs. Based on the information received, a peer institution appeared to be paying around \$500,000-600,000 per year for these types of charges over and above their base contract. These charges do not include athletic events nor do they include major special events including those of auxiliaries. The costs are for expanded building hours and academic related charges. UT's student population size is about half that of this peer institution, and it is reasonable to believe that the number of such events may be proportionately smaller at UT. Accordingly, unless the base contract requires the vendor to provide services in extended and extra hours, it is possible that about \$250,000-\$300,000 per year in additional costs to accommodate extra hours may be needed under outsourcing.

5. Costs associated with loss of Institutional Knowledge

Institutional Knowledge is difficult to monetize and is largely not considered a budgetary item. From a project or program management perspective, however, Institutional Knowledge is



As institutional knowledge increases, risk of facilities failures, of any magnitude, declines. When risk of failure is low, costs associated with risk are low.

fundamental to minimizing risk of failures. These failures may vary in magnitude from reasonably mundane, such as a refrigerator or freezer going out of service or the lack of regular maintenance on plumbing systems, to catastrophic, such as a broken gas main or flooding of buildings due to blocked drainage pipes. Irrespective of the magnitude of the failure, the costs associated

with these failures may vary small to significant financial costs to students and faculty. Deep institutional knowledge helps minimize these risks.

Simple example. Loss of a freezer.

Assumptions:

- i) Freezer houses samples for 5 student projects
- ii) Students are PhD and have been in the program for 3 yrs
- iii) Samples are largely plant and soil DNA
- iv) Six 90 well plates per project
- v) Significant travel time was required to acquire samples
- vi) Undergraduate workers were involved in sample preparation
- vii) Significant discussions were undertaken with advisor about project plans

Calculation of costs:

We assume that all students are making \$20,000/yr with an additional \$7,000 used for insurance and tuition (\$405,000 lost labor). A 90 well plate costs \$5,000 and 6 plates per project and 5 projects gives losses of \$150,000. Estimating that travel, undergraduate workers and planning is an additional \$15,000/yr/student (\$225,000), then a freezer could be valued at around \$780,000. A complete loss of such equipment would be financially significant, but it would also increase the time to graduation of the graduate students and reduce the productivity of the associated faculty. There are approximately two units of this value on most floors (4 floors/bldg.) of the four main buildings that house the “sciences” at UTK. Electrical outages are common (approximately 2/yr that are unplanned) and understanding how to prepare for and problem solve these power issues is complex and could readily cost millions of dollars to respond to in a timely manner.

One anecdote with a current UT employee, suggested that even after 6 years, he still wasn't completely familiar with how plumbing and electrical systems worked in some of these buildings. A novice employee without guidance from someone with extensive experience in a building is unlikely to have the knowledge to respond quickly and also have the potential to carry out an action that increases the risk of failure. Similar examples could be built for more complex problems associated with plumbing or gas, and that pose potential physical harm to individuals on campus. During routine plumbing maintenance recently, a 2.5-inch line broke and flooded a lab in Dabney/Buehler. The leak was stopped almost immediately. It was discovered at 4:15PM. Had the leak been missed, the whole floor would have been flooded. It is difficult to estimate how much this would cost, but the clean-up and renovation for an entire floor, or more of a building would likely cost many thousands of dollars.

The above calculations are an example. One way to estimate a campus-wide impact is to use the history of losses on campus over the past several years, perhaps in three groups, minor, medium and major. Assuming the number of occurrences per year of each as r_1 , r_2 , and r_3 and associated mean costs of c_1 , c_2 , and c_3 then assume that reduced institutional knowledge leads to a 10% increase per year in each type of occurrence. For example, suppose that

$r_1 = 10$, $r_2 = 2$ and $r_3 = .4$ with $c_1 = 10000$, $c_2 = 100000$ and $c_3 = 1000000$ then a 10% increase in mean costs per year would total $10000 + 20000 + 40000 = \$70,000$

6. Loss of academic connections

Facility Services provides a wide array of support for academic areas at UTK that would be completely lost if the employees involved were outsourced. This assumes that inclusion of activities not directly related to their core job responsibilities would not be allowed in any contract with JLL. A summary of Academic support by Facilities Services includes:

Participation in courses 2013-2016

- Facilitate/mentor projects: 21 courses from 10 departments

- Class presentations: ~ 19/year

- Oversee student service learning projects in 2 Colleges

- Courses taught: 3 non-credit and 1 credit

- Class and student club tours of facilities: ~ 100 students/year

Experiential learning

- Student employees/interns: 44/year

- Graduate assistantships: 2/year

- Oversee student volunteers: 200 students/year (1500 hours/year)

- Student Environmental Initiative: to date has resulted in savings to UT of \$150,000/year

Research partnerships

- Special Team to Assist Research (STAR) assists with research facility development

- Provide data, materials, and design plans

- Provide collaborations and in-kind contributions for external grants

Under outsourcing approximately \$30,000 (2 x \$15,000) of graduate student and \$220,000 (44 x \$5000) of support for undergraduate students would not occur, \$15000 worth of student supervision (\$10 per hour x 1500 hours) would be lost, \$150,000 of environmental savings would not occur and about 140 credit hours x \$42/credit hour = \$5800 in student tuition fees would be lost. So in total Facilities Services provides at least \$420,000 of value to academics each year which would be lost under outsourcing.

7. Cost of Contract Supervision

Based on prior experiences with outsourcing custodial services with two separate vendors over the course of more than two decades, UT will need to retain staff to monitor contract compliance by JLL. Three managers covering the areas of maintenance, custodial and grounds will present an estimated recurring cost of \$300,000 in salaries, benefits and operations.



Facilities services staff assists Jon Hathaway of Civil and Environmental Engineering on stormwater research.

8. Loss of state tax revenue:

Assumptions:

We assume that outsourcing of Facility Services to a private out of state company may result in some loss in local subcontracting, some reduction in the workforce providing the services, as well as some change in the salary and benefits of the workers that stay with the new company. These changes may result in some loss of state tax revenue.

Calculations:

1. A reduction in local subcontracting may take place.

Based on 2014-2017 (current) vendor expenditure figures, approximately 19% of vendors on average, do not have local offices. We assume these figures are 100% related to Facilities Services activities, which may result in some overestimation. Figures ranged from 15% (2014) to 24% (2015). If some reduction in local subcontracting takes place, a loss in tax revenue may be incurred from income and sales taxes paid by contractors to other states. If we assume a 14% loss in local subcontracting, the percentage of non-local contractors could go on average from 19% to 30%. This includes suppliers of materials or services elaborated or developed in a different state and delivered to TN. Based on the rate of increase in contractor dollars in the periods 2014-15 (5%) and 2015-16 (18%), we assume an increase between 2016 and 2017 of 15%. We also assume a state income tax rate of 6.5% and sales tax rate of 10%. Each of these

would be applied to 50% of the difference between previous and current contract gross incomes.

In the case of the state's "General Government" real estate portfolio, one of the goals was to decrease subcontracting by making use of trained employees to perform services such as electric work, painting, etc. through the workforce of the professional facilities management services provider. This has not been included in the estimations, as we consider that these would be more likely to affect local contractors. Under these assumptions, the calculated loss in revenue would be \$169,000 in a year (\$67,000 income tax and \$102,000 sales tax).

2. Loss of sales taxes due to reduction in disposable incomes of employees outsourced.

In the case of the TN General Government experience, the state employees retained were paid 28 percent more than they did as state employees. Ten percent of that amount was adjustment for difference in benefits, but the other 18 percent was considered payment upgrade as a consequence of the change. If this were to apply to UT outsourcing, there could be a sales tax benefit from increased disposable income. Assuming a workforce of 600, an average salary of \$41,267/yr, sales taxes of 1812 (using the IRS sales taxes calculator for the 37996 zip code) and a linear increase in purchases with an increase in salary, the sales tax benefit would be approximately \$172,000. If however, a decrease in disposable income were to take place, the balance would be negative. Assuming a 15% reduction in disposable income, the loss would approximate \$144,000 in a year.

3. Loss of taxes due to loss of local supervisor personnel

Assuming a supervisor rate of 5% (1 supervisor for 20 workers) a decrease of 75% in supervisory personnel and a salary of \$65,000, which results in estimated sales taxes of \$2337, this would result in a tax revenue loss of roughly \$44,000 in a year.

4. Tax loss from unemployment payments

Outsourcing initiatives may result in a number of former state employees becoming unemployed, especially during the initial years. For our calculations, we have assumed a 10% loss in workforce, 50% of which remains unemployed during the year, and unemployment benefits equal to \$15,000 per year assumed by the state. The cost would be approximately \$375,000 in a year. Additionally, a loss in sales tax revenue may result from the decrease in purchasing power of laid out personnel. Assuming 50% of laid out workers perceive unemployment benefits and the other 50% find jobs with a 30% reduction in salary the total loss in sales tax revenue would be approximately \$61,000. These figures may decrease as laid out employees find alternative jobs with better pay.

5. Loss of student employees

JLL budget did not include information on student employees. We assume a 20% loss and a salary of \$15,000 with sales tax of \$692. Assuming this to be a permanent loss, the loss of tax revenue would be approximately \$4,400.

In summary, the calculated loss in tax revenue to the state under these assumptions would be approximately \$966,000 if a 15% reduction in disposable income takes place for workers that remain employed with the new company or \$650,000 if an 18% increase in disposable income occurs. While these figures are based on a number of assumptions and somehow arbitrary expected changes, they serve the purpose of framing important aspects of tax revenue loss for further discussion. As noted in item #3 above on TennCare, about 1.5% of the total State budget is used to fund UTK, the tax losses would imply a reduced allocation to UTK of about \$14,500.

9. Other costs

The Committee also considered a variety of additional issues that affect potential savings from outsourcing, but has not attempted to estimate associated costs. These include: (a) extra cleaning required to meet particular health needs of certain employees, for example those with allergies to dust; (b) the need for hazardous materials training for the outsourced employees to ensure both their safety and that of the campus population; (c) costs for "specialized work" e.g. with hazardous materials such as cleaning areas that may have asbestos, or for maintenance that involves expensive equipment that would not typically occur in office complex-type facilities; and (d) costs for equipment that UT will provide and that UT will be required to maintain/purchase if misused by outsourced workers.

Summary:

The objective of this report is to point out issues that the UTK/UTIA administration is encouraged to consider in the decision process regarding outsourcing. We encourage that an overall project risk assessment be carried out, including the above issues and others that those with extensive background in facilities here be involved in constructing. There are many available guides for carrying out such a risk assessment and we have not attempted here to carry this out. S

The total costs identified above that could reduce any potential savings from outsourcing are over \$1.1M annually. These estimates are based on very coarse assumptions however and we encourage the administration to consider each of these components particularly as they do not include any variance associated with major problems. They also do not include any of the variety of human capital concerns, the costs of any transition period, or the costs associated with any lack of timely response to campus maintenance needs.