Key Findings

Technology Assessment

Onsite Assessment Conducted:
December 13-14, 2005

Presented to
Lansing Community College Board of Trustees
February 9, 2006
Collegis Standard Technology Assessment Process and Deliverables

The SunGard Collegis, Inc. (Collegis) Technology Assessment process is based on observation, client interviews, and analysis of documentation prepared by the college staff. The process involves a team of experienced Collegis higher education technology professionals selected to address the technologies present at the college’s site and the technology support of operational areas across the college’s organization. The Collegis assessment team typically spends 1 – 1 ½ days onsite conducting interviews and inspecting the physical technology environment. Subsequent analysis of all data gathered and provided by the college allows Collegis to develop an understanding of the overall strengths and weaknesses of a client’s technology operations. Collegis will present these findings to the client in a proprietary format.

The Collegis Technology Assessment process is not an audit. The process does not involve inspection of code, of configuration settings on devices, testing of backup and restore procedures or disaster recovery plans, verification that written procedures are actually the current operating procedures for either technology or business processes, or other in depth investigations. The Technology Assessment is, as stated above, based on observation and on data provided by the institution. Where data and observation conflict, Collegis will so note and may make attempts to determine which information is correct. The accuracy of the Assessment findings depends significantly on the quality of information provided by the college.

Collegis’ experience in higher educational technology and in the business processes of higher education, combined with our Technology Assessment methodology, allow us to effectively analyze the operations of a college’s technology and provide insightful and useful information to the client. The outcome of an Assessment is a picture of areas in need of improvement across the institution as well as the areas that are highly effective. These areas include the “core technology” areas, the business and academic operational areas supported by technology, and the client’s strategic use of technology. The Assessment findings are a starting point for an institution to begin prioritizing technology improvements to enhance its overall academic and operational performance.

Collegis is a product-neutral company. Its assessments and subsequent recommendations are based on the needs of individual colleges, each of which is unique. Please see Exhibit D for basic facts about SunGard Collegis.

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Lansing Community College Assessment Process

- Collegis team: 14 higher education professionals including current and former CIOs, regional technology managers and specialists with expertise in Oracle technical and functional areas; higher education business processes (including Finance, Student Systems, Human Resources, Financial Aid); academic technology operations; network and infrastructure design, operation and security; desktop technology management, operations and user support.
- Assessment interviews: 59 scheduled meetings with 63 different executives, trustees, administrators, staff, technology staff, faculty and students
- Online survey: Distributed by LCC to all employees. 289 individuals responded (executives, trustees, administrators, staff, technology staff, faculty)
- Analysis of documentation provided by LCC staff both before and after the on-site assessment visit. Collegis received most of the information requested in its standard pre-assessment questionnaire.

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Key Findings – Lansing Community College

1. CIO and technology leadership organization do not mesh with higher education or management norms.
   a. Excessive number of direct reports to CIO (14 individuals). “Extending span of control beyond the recommended limits engenders poor morale, hinders effective decision-making and may cause loss of the agility and flexibility that give many entrepreneurial firms their edge…People won’t act or are even afraid to act…Then problems don’t get worked out, and everything gets escalated to the top. Eventually, you’re not going to be able to respond.”
   b. Exceptionally wide range of responsibilities of CIO, including such institution critical and disparate components as Marketing, Organizational Development, Strategic Initiatives, and Institutional Research. Management theory predicts that more diverse responsibilities require narrower than normal span of control. These responsibilities are well outside the list of 14 core technology functions typical of “central IT organizations” in higher education as reported by Educause, (the major Higher Education Technology Professionals association) in their most recent Core Data Survey (covering 890 colleges). 
   c. Technology managers also, in some cases, have ranges of responsibility not typically seen in a college of LCC’s size and which exceed their range of technical expertise (examples: Database Manager also in charge of servers; Director of Personal Computing responsible for network and security staff and telecommunications)

2. Technology planning, governance, leadership and decision making are, in the opinion of most interviewees, dictatorial and uni-dimensional
   a. The “Technology Liaison Committee” is chaired and controlled by the CIO. A number of the members either report to the CIO or are heavily influenced by the CIO. Even the “faculty” representative is actually a technology department staff member.
   b. The technology staff is out of touch with the rest of the LCC community. They have a very different vision of the value and the quality of the technology services they deliver to LCC, as well as different perspectives on how their technology vision aligns with that of the rest of LCC. This was obvious from the many comments in interviews but especially noticeable in the differences in the responses to Collegis’ online survey. See Exhibit A for excerpts of survey results. Note especially the divergence of opinions evidenced in the figure at Exhibit A, page 2.
      i. Sample interview comment: “IT needs to become more supportive of the major functions of the college. Major decisions should not just be IT - they do not ask for other departments input or if they do, they don’t heed it. This is very frustrating. IT has too much power …too many key areas report to them and has too much control” [Student Support area].
      ii. Sample interview comment: “When [we] went to Oracle the ISCD didn’t listen [to us]. The budgeting systems doesn’t work, timesheet is more time consuming, expense reports are VERY cumbersome, [I] haven’t registered for a class yet due to the issues and problems” [Off Campus Learning].
   c. LCC is fortunate in having a number of dedicated, hard-working and effective technical support staff. The survey comments as well as interview comments make this clear. However, these workers are laboring to fix problems created by poor technology management, poor technology organization, and poor choices of technology environment (Oracle Student application systems, elimination of the stable and effective Math Lab, transition to Angel without effective and tested interfaces with Oracle, transition to Oracle with no interface to Innovative [library system] etc.)

3. No Academic Technology plan was provided by the college. Interviews revealed a lack of plans, vision, or coordination of the use of technology in academics, either for in-class or online education.
   a. The lack of an online academic plan means that LCC is not serving a sizeable segment of its target population and is missing important (and growing) revenue opportunities.
      i. 63% of colleges offering undergraduate degrees also offer degrees online
      ii. 72% of Associate’s degree colleges state that online education is a critical part of their long term strategy (up from 56% in 2003)

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b. Interviewees told us that several years ago, LCC had a viable Distance Learning operation, complete with policies, practices and a plan. LCC disbanded the operation in 2002.

c. LCC’s Strategic Plan includes as a Principle:
   “6. LCC will strive to be “state of the art” in all that it does, while pursuing a select number of cutting-edge initiatives.” The lack of a significant online plan and effort does not adhere to that “state of the art” principle.

d. Current practice in some academic departments is to place “overflow” students into online classes – without their advance knowledge, and without any effort to determine these students’ interest in or readiness for an online course. This is a guaranteed way to create high drop rates, lower academic success, and decreased student satisfaction.

e. Lack of a plan means that course designs and pedagogical approaches vary greatly, to the detriment of student learning. For the student, each course poses not only new academic challenges but s/he must struggle to figure out how the online software and course design work together.

f. LCC states that online enrollments grew by 70% between Spring 2002 (when the Online Learning department was disbanded) and Spring 2005. That statement ignores:
   i. quality control and student support issues cited above
   ii. the apparent siphoning off of on-campus enrollments (main campus enrollments dropped by 2% in the same time period; total enrollment growth for online, main campus and learning centers was only 7.8% over the same time).
   iii. National figures are not yet available for Spring 2005 online enrollments, but the Sloan Consortium found a 43% online enrollment growth between Fall 2002 and Fall 2004. In that same time period, LCC’s online growth was only 29%.

In other words, one possible conclusion is that the lack of a college-wide, strategic online learning plan means Lansing has missed the opportunity to broaden its education and service reach to individuals not previously served by the college. LCC is in what amounts to a “zero sum game” online academic operation without recognizing that implication.

4. Technology staffing levels are high and do not match the technology needs of LCC. Technology staffing requires examination, reconfiguration, and evaluation

a. Based on LCC documents provided, LCC has 110 FTE technology staff, with a headcount of 162, a very high number for a college of LCC’s size. Indeed, the maximum central technology FTE for all of the Associate’s colleges included in the most recent Educause Core Data survey is 112. [The survey includes colleges much larger than LCC.] Collegis’ experience is that for comparable sized colleges, running stable software, with an effective organization, a full time technical staff of 40-60 adequately meets the needs of the college.

i. A more directly comparable measure, and one that focuses on the fundamental mission of any college, is the ratio of the number of FTE STUDENTS per FTE TECHNOLOGY STAFF. This “Students Supported per Tech Staff Number” ratio for Associates’ degree colleges has a median value of 210 FTE Students for every 1 FTE Technology staff. For Lansing, the ratio is much lower: only 94 FTE Students for every 1 FTE technology staff. A possible conclusion is that due to some combination of technology management issues and choices of technology there are approximately 100% more technology staff at LCC than are actually required. This possible conclusion may be somewhat mitigated by LCC’s stated goal of being “cutting edge” in technology.

b. The current technology staff in some mission-critical areas (especially Oracle technology) lacks the expertise to maintain the technology that is at the core of LCC’s operational life [See Institutional Risk Factors, Section 9].

c. Interviews with LCC’s Oracle staff revealed that these individuals lacked formal training and expertise in the use of the complex Oracle technology and could not be relied upon in an emergency, nor could they be relied upon to obtain the most effective utilization of the existing software and hardware. [See Exhibit B – Oracle Applications Report]

i. LCC compensates for this lack of expertise by spending substantial amounts (estimate the amount to be approximately $400,000 to 500,000/year) in hiring outside consultants who, along

4 ibid
with other consulting responsibilities, monitor and maintain daily operations which in most institutions of LCC's size would be performed by the college's technology staff.

d. There is overlap of staffing responsibilities with resulting inefficiencies. The prime example is the Classroom Technology staff, which is entirely separate from the main "ISCD" (Information Services and College Development) operation. The two groups both maintain staffs of PC technicians, one for classroom PCs and the other for Lab PCs and faculty/staff PCs. This is a redundancy that results in additional cost to LCC, has the effect of producing different technology environments to manage and support, and results in a more difficult environment for the user community.

e. Despite the high staffing count:
   i. A number of comments in the survey (including comments from members of the technology staff) complain about lack of technology staff.
   ii. One of the CIO's points of pride has been the reduction of technology staff in the last few years, "We've decreased IT staff expenditures by $600,000 this year…Our consolidated, Oracle infrastructure is making this possible."?
   iii. As we point out elsewhere:
      1. The level of technical expertise of the staff, especially the Oracle and infrastructure groups, is a matter of concern. Limited expertise can easily lead to the need for more staff to do the essential work.
      2. LCC eliminated staff positions in some offices during the Oracle implementation – just at the time when extra staff were desperately needed in those offices
      3. Concurrent with staff elimination, LCC began paying $400,000 - $500,000/yr to outside firms to perform core IT duties related to Oracle (see below).

5. Technology Costs:
   a. LCC's core\(^8\) technology expenditures are high. They are much higher than average (on a $/Student FTE basis) for an Associates' college (by 92\%)\(^9\). LCC would be wise to consider a serious review of its technology spending to determine what factors contribute to the high costs and whether the college receives benefits commensurate with these levels of expenditure. We recognize that LCC’s Strategic Plan calls for it to be a leader in technology, embracing the latest available technology, and we recognize that means LCC will spend more than the typical college. We still are surprised at the 92% variance between LCC and the median Associates' degree institution technology spending on a $/Student FTE basis.

<table>
<thead>
<tr>
<th>LCC TECHNOLOGY Cost Categories FY06</th>
<th>Costs</th>
<th>Technology Cost per Student FTE at Lansing CC</th>
<th>Median Technology Cost per Student FTE for Associates' Colleges (Educause Core Data Survey)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Personnel Costs (includes fringe benefits and Jan 1, 06 increment)</td>
<td>$5,707,043</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operating Costs</td>
<td>1,516,038</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Capital Costs</td>
<td>3,000,000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TOTAL TECHNOLOGY EXPENSES FY06</td>
<td>$10,223,081</td>
<td>$987</td>
<td>$514</td>
</tr>
</tbody>
</table>

6. Oracle Costs: our findings are based on documentation received from LCC consisting of signed purchase orders for the three main software vendors involved in the Oracle system purchase, implementation and ongoing maintenance. This is not the total Oracle applications project cost, which will be higher, as the total project costs would include hardware and in-house staffing costs, among other items. Before, during and after our assessment visit we received widely varying statements of the cost of the Oracle applications project cost. We suspect that much of the discrepancy comes from two sources (1) difference in definition of just what is included in the “Oracle

\(^7\) LCC CIO, quoted in Oracle Customer Profile at [http://www.oracle.com/pls/cis/Profiles.print_html?p_profile_id=7798](http://www.oracle.com/pls/cis/Profiles.print_html?p_profile_id=7798), [viewed January 9, 2006. Removed from web site between then and February 7, 2006; site address now states “This Profile has been removed!”](http://www.oracle.com/pls/cis/Profiles.print_html?p_profile_id=7798)

\(^8\) “Core” includes these groups: ISCD, Technology Infrastructure Applications and Reporting, Instructional Designers, College Development Group, Help Services, Center for Teaching Excellence, Media Services Administration, Classroom Services

implementation” and (2) incomplete or unclear documentation provided to the various parties trying to determine the cost. One key point: apparently LCC never developed a master project plan for the Oracle implementation. The plan would have included a project budget. The master project plan was requested by us and evidently by the Trustees, but no document was provided to us. That any project of this magnitude lacks massive documentation represents significant lapses in management and poses risks to the institution.

a. **Operating (Software Maintenance) Cost:** Our cost analysis focuses on the costs of maintaining and operating the Oracle applications systems now in place at LCC. Key issues for any college include not just “what does it cost” but also “is there a lower cost alternative”. For that reason, we include the comparable costs of software maintenance for the equivalent Banner applications (the system LCC had in place before replacing it with Oracle applications). [Software functionality is as important as cost and that issue is addressed in Section 7.]

LCC identified three main software/implementation companies involved in the Oracle project: Oracle, Efficient Computing, and EIS. These are the three vendors included in our cost estimates. We had to exclude the costs of hardware as we could not independently verify those costs. Other sources cite hardware costs as perhaps $1,000,000 or more. Again, hardware costs are not included in our estimates.

We present the results of Oracle operating costs estimates in a series of three pairs of tables and figures.

i. **Table 2 – Figure 2:** Payments made over the approximate life-to-date of the Oracle applications implementation to Oracle Corporation for software maintenance ONLY, with comparable Banner costs.

ii. **Table 3 – Figure 3:** Payments made over the approximate life-to-date of the Oracle applications implementation to Oracle Corporation for software maintenance plus maintenance payments to two other software vendors that are essential for the ongoing support of the Oracle applications system, with comparable Banner costs.

iii. **Table 4 – Figure 4:** Software purchase and implementation costs in addition to the payments made over the approximate life-to-date of the Oracle applications implementation to Oracle Corporation for software maintenance plus maintenance payments to two other software vendors that are essential for the ongoing support of the Oracle applications system, with comparable Banner costs.

b. **Total Project Cost:** The maintenance cost profiles are only a subset of the total cost of the Oracle project. Collegis did not have access to all of the data required to generate independently a complete project cost. However we did receive a number of project cost statements after our assessment visit. The estimates vary widely; again, we lack the data to identify which, if any, is the correct estimate. The estimates came from ISCD (the main LCC technology department) and the LCC Board of Trustees. See Table 5 and Figure 5. Again, these costs are compared to the cost of maintaining the previous Banner system.
Table 2. Payments for Software Maintenance

- Oracle costs based on LCC-supplied Purchase Orders
- Banner costs provided by SunGard SCT

<table>
<thead>
<tr>
<th>Fiscal Year</th>
<th>Oracle</th>
<th>Banner</th>
</tr>
</thead>
<tbody>
<tr>
<td>2002</td>
<td>$589,703</td>
<td>$232,309</td>
</tr>
<tr>
<td>2003</td>
<td>530,108</td>
<td>250,894</td>
</tr>
<tr>
<td>2004</td>
<td>692,434</td>
<td>270,966</td>
</tr>
<tr>
<td>2005</td>
<td>566,146</td>
<td>292,643</td>
</tr>
<tr>
<td>2006</td>
<td>578,745</td>
<td>316,054</td>
</tr>
<tr>
<td>TOTALS</td>
<td>$3,594,926</td>
<td>$1,704,205</td>
</tr>
</tbody>
</table>

TOTAL VARIANCE $1,890,721 111%

Notes:
(1) Banner applications run on an Oracle database. Maintenance costs listed for Banner include annual Oracle database support/license fees.
(2) Banner costs include Luminis portal for all years in order to provide a true comparison. LCC had not yet purchased Luminis when it switched to Oracle Applications.
(3) Oracle costs include the overlapping Banner maintenance costs. LCC had to pay both vendors during the implementation period to maintain Banner functionality, and continues to pay for Financial Aid support.

Table 3. Payments for Software Maintenance INCLUDING Oracle, EIS and Efficient Computing

- Oracle, EIS costs based on LCC-supplied Purchase Orders
- Banner costs provided by SunGard SCT

<table>
<thead>
<tr>
<th>Fiscal Year</th>
<th>Oracle</th>
<th>Banner</th>
</tr>
</thead>
<tbody>
<tr>
<td>02</td>
<td>$594,828</td>
<td>$232,309</td>
</tr>
<tr>
<td>03</td>
<td>566,168</td>
<td>250,894</td>
</tr>
<tr>
<td>04</td>
<td>703,059</td>
<td>292,643</td>
</tr>
<tr>
<td>05</td>
<td>910,146</td>
<td>316,054</td>
</tr>
<tr>
<td>06</td>
<td>912,745</td>
<td>341,339</td>
</tr>
<tr>
<td>07 [Est]</td>
<td>971,730</td>
<td>316,054</td>
</tr>
<tr>
<td>TOTALS</td>
<td>$4,658,676</td>
<td>$1,704,205</td>
</tr>
</tbody>
</table>

TOTAL VARIANCE $2,954,471 173%

Notes:
(1), (2) and (3) from Table 2 apply to Table 3 as well.
(4) To the degree possible, the EIS and Efficient Computing costs in this table include ONLY annual support costs. They EXCLUDE amounts paid by LCC for actual SOFTWARE DEVELOPMENT and IMPLEMENTATION SUPPORT. As such, the costs listed here are ongoing, annual costs to support functions not available in Oracle.

Table 4. Payments for Applications Purchase, Implementation & Maintenance INCLUDING Oracle, EIS and Efficient Computing

- Oracle, EIS costs based on LCC-supplied Purchase Orders
- Banner costs provided by SunGard SCT

<table>
<thead>
<tr>
<th>Fiscal Year</th>
<th>Oracle</th>
<th>Banner</th>
</tr>
</thead>
<tbody>
<tr>
<td>02</td>
<td>$4,540,587</td>
<td>406,309</td>
</tr>
<tr>
<td>03</td>
<td>837,792</td>
<td>450,894</td>
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<tr>
<td>04</td>
<td>1,293,059</td>
<td>270,966</td>
</tr>
<tr>
<td>05</td>
<td>946,722</td>
<td>292,643</td>
</tr>
<tr>
<td>06</td>
<td>1,016,555</td>
<td>316,054</td>
</tr>
<tr>
<td>07 [Est]</td>
<td>971,730</td>
<td>341,339</td>
</tr>
<tr>
<td>TOTALS</td>
<td>$9,606,445</td>
<td>$2,078,205</td>
</tr>
</tbody>
</table>

TOTAL VARIANCE $7,528,240 362%

Notes:
(1), (2), (3) and (4) also apply to Table 4.
(5) Banner costs include purchase and implementation of Luminis portal in order to provide functional comparisons.
(6) This is not the total Oracle implementation cost. It EXCLUDES hardware costs (probably close to $1M, but a clear delineation of Oracle-related costs was not available to us); it also excludes the added staffing costs, opportunity costs, and student revenue costs associated with the Oracle system problems.
Table 5. OVERALL ORACLE PROJECT COST ESTIMATES

<table>
<thead>
<tr>
<th>Source of Estimate</th>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>LCC President's Office, labeled</td>
<td>5 Yr Project Cost</td>
<td>$10,221,234</td>
</tr>
<tr>
<td>&quot;Attachment C Laverty's email of 9/22/05&quot;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LCC President's Office, response to C.</td>
<td>Technology Infrastructure Transfers, FY02-06</td>
<td>$20,150,000</td>
</tr>
<tr>
<td>Laverty's email of 9/22/05 (sent to P. Cunningham)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LCC Board, from Board Counsel, 2/8/06</td>
<td>Oracle Project</td>
<td>$40,800,000</td>
</tr>
</tbody>
</table>

SCT BANNER: Cost of maintaining Banner (including portal)  $2,078,205

VARIANCE between Oracle and Banner costs

<table>
<thead>
<tr>
<th></th>
<th>Low estimate</th>
<th>High estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$8,143,029</td>
<td>$38,721,795</td>
</tr>
</tbody>
</table>

Conclusion: The cost of switching to Oracle was very high. Oracle costs will continue to exceed the ongoing costs of running the previous software, Banner. Unless LCC can demonstrate functional improvements commensurate with these increased costs, then the college has expended substantial funds with a “negative” return on its investment.

7. Oracle selection process and software functionality
   a. Why Oracle? To move from a mature, market-leader software system into the realm of a new, untested, and in some parts, a not-yet-written software system, especially when that system is at the core of the institution’s operations, requires strong and unequivocal justification of great advantages in cost savings or major improvements in functionality or a major transformation of the institution. As demonstrated already, cost savings cannot be an adequate reason. The comments below (and in the open comments from the user community, see Exhibit A) indicate that functionality is not an agreed upon rationale. Transformation of the institution is an open question. None of the changes we observed or heard about required the use of Oracle (see below). In short, none of the documents provided by LCC demonstrated a need to abandon the world’s largest selling higher education administrative information system (SCT Banner) in favor of an untested (and, in fact, an unwritten) product. The latest Educause Core Survey10, which identified the administrative systems in use by colleges, lists systems operated by 5% or more of the reporting institutions. Oracle does not even “make the cut” at this 5% level (Table 6). Products with such a small

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market penetration are not typically selected by technology-savvy colleges that understand the myriad issues of critical mass of clients, support challenges, market viability, etc. These factors pose significant risk to LCC; see Section 9.

Table 6. Administrative Software Systems in Use by 5% or More of Associate Degree Colleges

<table>
<thead>
<tr>
<th>Vendor</th>
<th>Systems Used by &gt;5% of Associates' Degree Respondents¹¹</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Student</td>
</tr>
<tr>
<td>SCT</td>
<td>33%</td>
</tr>
<tr>
<td>Homegrown</td>
<td>22%</td>
</tr>
<tr>
<td>Datatel</td>
<td>17%</td>
</tr>
<tr>
<td>PeopleSoft</td>
<td>11%</td>
</tr>
<tr>
<td>Jenzabar</td>
<td>9%</td>
</tr>
</tbody>
</table>

i. LCC is a large, complex, sophisticated community college. So are thousands of other successful users of Banner, Datatel and PeopleSoft, all of which are mature, richly featured systems able to meet the needs of these colleges. Every college has its share of unique operations embedded among the much larger pool of common operations. We heard nothing during our LCC interviews to indicate that LCC had unique characteristics that could not be resolved by these other systems. Note that there are 20 Banner clients (including many of Michigan's larger colleges and universities) and approximately 20 Datatel clients in the state of Michigan, each of which is operating successfully with these systems. There are no other Oracle Administrative Applications clients in Michigan. See Exhibit C for a list of Michigan colleges and universities currently successfully using the Banner applications (the software operating at LCC prior to its decision to switch to Oracle applications).

ii. Among the rationales for switching to Oracle was a statement by the LCC CIO that the switch would save money on system maintenance (labor and vendor support cost) due to reduction in the number of servers. "We had more than 80 [total] servers, and it was difficult just keeping the systems maintained. It was impossible to move forward... [We] Reduced the number of existing IT servers from 80 to approximately 30"¹². During the Collegis assessment, our team identified 125 servers, of which 42 were identified as dedicated to the Oracle applications, contradicting the "reduce maintenance" rationale statement of the CIO.

iii. Rationale for abandoning Banner: a member of the Oracle selection team was told by the CIO, "Banner is an awful database". However, Banner is software that runs on an Oracle database – the exact same Oracle database that powers the Oracle applications suite.

iv. Rationale: if we stay with Banner we will have to face an implementation anyway, in order to implement web applications and to get away from Social Security number as the primary student identifier. Reality: installing the web applications (some of which were already in place) is a minor effort that runs "on top" of the already implemented system. The web applications are merely another way to "look at" the already installed system, with its complex logic and business processes already built, tested and running. The switchover from SSN to a new identifier requires effort, regardless of whether done with a new product or existing product. Thousands of Banner clients have made the switch successfully and with only modest effort and little cost compared to a new systems implementation. Most handled the transition with internal staff.

b. The “electronic campus” espoused by the CIO is realizable through a number of available products that require less skill, time, and money to support than the monolithic and complex Oracle environment selected.

¹¹ ibid

¹² LCC CIO, quoted in Oracle Customer profile, http://www.oracle.com/pls/cis/Profiles_print_html?p_profile_id=7798 [viewed January 9, 2006. Removed from web site between then and February 7, 2006; site address now states “This Profile has been removed!”]
i. The core of the electronic campus could easily have been provided by Banner’s portal and self-service products which were available to LCC at no, or relatively modest, cost. [Note that the cost comparisons in Tables 2 through 5 include the cost of acquiring, installing and/or maintaining the Banner portal in order to provide a more accurate comparison of the two systems.]
   1. LCC already had licensed the self-service products and had online Admissions and online Registration already implemented at the start of the Oracle implementation.
   2. LCC had already developed the expertise to manage the Banner self-service products and could easily have completed roll out of the entire self-service suite within 1 – 1½ years at a cost of perhaps $100,000 - $300,000 (in consulting fees and some additional hardware).
   3. The Banner portal product is a pre-built system that integrates automatically with all of the Banner self-service systems and other products. Oracle’s “portal” is actually only a software “toolkit” and “framework” that software developers use to build customized portal systems. The cost of doing so is significant in terms of time and the high-cost skills required.

ii. Online training systems, remote access to electronic files, email, and other features of the electronic campus were readily available through such industry standard products as Microsoft Exchange, Microsoft Active Directory, Blackboard online learning system and a number of other products. Because LCC already had licenses for at least some of these products, and because others are available at very substantially discounted academic prices, the cost to use them as tools to build a unified electronic campus would have been a small fraction of the Oracle suite acquisition and implementation cost.

iii. There are two common, opposing philosophies of software acquisition: (1) “best of breed” (buying separate software for Finance, HR, Student, etc. because each piece is the best available for that specific function) and (2) “integrated suite” (buying multi-functional software because of the integration of data and business processes). LCC had already adopted the integrated suite approach when it selected Banner. It again chose the “integrated suite” with Oracle but did not provide us with any, let alone a reasonable, cost/benefit analysis of why it chose to switch from the industry leading integrated suite to an untested, partially unwritten integrated suite.

8. Oracle implementation: [This section provides only a brief summary of Oracle issues. For a more in-depth analysis, please refer to Exhibit B – Oracle Systems Report.] Interviews almost universally generated the same theme: the Oracle implementation was the single focus of the ISCD organization for the last five years. This is to be expected when implementing such complex systems. However:
   a. We reviewed the two earlier consultants’ reports (BDO Seidman and Plante/Moran)
      i. We agree with the findings of both consultants. BDO Seidman focuses on the major flaws in (or more correctly, a lack of) project management methodology which is essential for success. This in turn implies a lack of expertise on the part of the IT Leadership to handle the complex projects they pushed onto the college. Without effective project planning and management methodologies, the Oracle implementation was destined for problems and failures before it began.
      ii. Plante/Moran’s report focuses on the more detailed areas of the Financial Aid crisis. The obvious mix of a weak Financial Aid operation coupled with the gaps in Oracle technology are both “red flags” that should have been apparent to the entire Oracle Project Leadership team well before the “go live” date [and would have been glaringly obvious if standard project management techniques had been in place and in use].
   b. An implementation project plan includes planning for the staff resources needed to implement a new system while maintaining operations in the old system during the transition process. The lack of planning for this component make it is quite likely that the unfavorable financial audit comments received in at least two recent years can be at least partially attributed to the Oracle implementation.
   c. Even years after a sub-system was in place, many users are still complaining about loss of functionality, loss of reporting availability, and ease of use. Others, particularly in Finance, are quite pleased with the effectiveness of the system.
   d. The ISCD operation ignores many needs that are not served by the Oracle software, forcing staff to utilize manual processes or create “shadow databases”. Example: library patron database.
      i. Note that the elimination of shadow databases was one of the prime rationales provided for switching to Oracle.
e. The implementation's leadership was focused on meeting project deadlines to the detriment of delivering to LCC users a stable, functional service environment. Two very visible examples of this:
   i. Student registration – when first offered, the system failed, requiring temporary halts to the registration process. Even when “up and running”, the system was so slow as to be unacceptable. Comments were made about “taking an hour or more” to register.
   ii. Financial Aid – when launched, the system failed to correctly apply financial aid to thousands of students.

f. Both examples cited (Registration and Financial Aid) reflect significant failures in leadership, project management and professional judgment. The two systems were allowed to “go live” without adequate testing or capacity planning. In the case of Financial Aid:
   i. The “power user” in Financial Aid was hired away from Financial Aid and into the ISCD division at the start of the implementation process, leaving the office without that key position for internal support and project leadership.
   ii. The Financial Aid internal position of Technology Support Specialist was eliminated as a cost cutting move during the implementation. This is a decision contrary to common sense as well as professional judgment.
   iii. The Director of Financial Aid was a member of the Oracle implementation committee. He had the overall responsibility for assuring the Financial Aid staff met their requirements for system implementation. By admission of the CIO, he was aware that the Financial Aid Director failed to fulfill his obligation, meaning he failed to assure that his staff had completed the essential project tasks and on time.
   iv. Oracle did not deliver a fully functional software product. The most obvious omission was lack of a function to handle “loan waivers”, which affected thousands of students. The CIO and the Financial Aid staff both were aware of this; no evidence was provided to us that either made an effort to develop a manual or automated workaround to deal with this gap in functionality.
   v. There was limited and inadequate testing of the Financial Aid system prior to launch.
   vi. In summary: the decision to go live with Financial Aid was a critical failure of professional judgment on the part of the CIO, Financial Aid Director and the entire Technology Liaison Committee – all of whom should have been well aware of the situation and the consequences.

9. Institutional Risk Factors: LCC is in a technology environment that exposes it to a number of risks, some of which may have major impact on the ability of the college to meet its obligations to students, faculty, staff and the community. Some of these risk factors:
   a. Financial Risk: The OASIS (Oracle implementation) has cost LCC between $10,000,000 and $37,000,000 over the past 5 years of implementation. The end is not in sight.
      i. There are still critical missing elements in the Financial Aid software; there are lingering problems of significant nature in the student system (missing functions and problems with existing functions) and HR/payroll systems; reporting is still problematical; and interfaces are yet to be built or debugged (examples include the complex and difficult to build and maintain interfaces between Oracle and the college’s online course management system, Angel, and its online library system, Innovative Interfaces, Inc.)
      ii. These (and very likely a number of other issues we did not uncover in our relatively brief assessment process) will likely cost LCC in excess of $1,000,000 to rectify.
      iii. The money will be spent on consultants to write custom software, to implement the new “bits and pieces” that Oracle may provide, and on extra LCC staff time to manually fix Oracle-caused problems and perform manual data entry in areas where Oracle could not automate a basic process.
   b. Operational Risk: LCC is well aware of the Financial Aid and Registration “disasters”, along with snafus such as multiple paychecks (some in the neighborhood of $1,000,000) issued during the HR/Payroll startup and numerous lesser problems. Based on our interviews, LCC has not fully resolved all of these challenges and will likely continue to experience problems in these and other areas for several more years. Indeed, some may linger with no resolution.
      i. Major problems such as Financial Aid pose a risk to the actual viability of the college. Should Financial Aid processes be found in violation of federal regulations, LCC could be barred from participating in all federal Title IV financial aid programs which could easily force the college to close its doors.
   c. Market (and subsequent Financial) Risk:
i. Any operational problems which affect student service pose a risk to LCC’s enrollment and therefore its revenue stream. Students in the Lansing area will seek out other sources of education or even forego an education if the experience does not meet their expectations for quality of service. Even those willing to tolerate poor service may find themselves shut out of courses due to operational problems with academic records, financial aid, or other issues.

ii. Any operational problems that affect students will result in loss of community support and therefore potential loss of revenue streams. LCC’s Strategic Plan includes a self-congratulatory statement about how the college pro-actively campaigned for and won a millage increase to offset the projected losses in state aid over the last four years (http://www.lcc.edu/about/strategic_plan/strategic_drivers.htm). The willingness of the community to continue this funding (or increase it) will erode if community members hear stories from family and friends of poor student service. Indeed the controversy surrounding the Oracle implementation has already resulted in far reaching negative publicity in the community and the state.

d. Software (and subsequent Financial and Operational) Risk:
   i. Oracle has struggled for years to bring a successful Student System to market. It has not yet succeeded, as LCC well knows. LCC actually represents a “success” for Oracle. A number of other colleges have invested more money than LCC and given up on the Oracle Student System software. Bringing the current Oracle Student System to maturity will require additional years of effort from Oracle, with the pain of every step felt by LCC.
   ii. Oracle may never complete its Student System. In 2005, Oracle purchased PeopleSoft. The PeopleSoft Student system is much more mature, feature-rich and easier to use than the current Oracle system. Oracle created a development team (composed mostly of PeopleSoft developers) to create the “best of both worlds” that is currently code named “Project Fusion”. This product is due out in 2007. This raises three levels of concern:
      1. Bringing the Oracle Student system up to the level of maturity (number of features, stability, user ease, etc) already available in PeopleSoft will require investment of millions of dollars of developer time. If Oracle is indeed going to release its “Project Fusion” product within 2 years, why would LCC expect Oracle to invest those millions on what is now a “dead end” product?
      2. Oracle’s Student system is not widely distributed. In fact, we would challenge Oracle to identify even 5 colleges with the Student system installed and operational. Why would LCC expect Oracle to continue to invest in product development (and customer support) when they have so little to gain from it, given their emphasis on the switch to the Project Fusion product?
      3. Oracle is very unlikely to sell any additional Student Services package. Any CIO worth the title would not even consider the cost and pain of implementing a new Student System when s/he knows the product’s lifecycle is ending within 2 years (and that assumes the product was mature and trouble-free, neither of which is the case for Oracle Student System). This again argues for limited support and limited improvement in the current Oracle product.

e. Technical Staffing (and subsequent Software, Financial and Operational) Risk
   i. The very limited market distribution of Oracle Student System means that there is no pool of talent in the marketplace to support the product. Inevitably, LCC’s current sources of Oracle Student Support will disappear. The in-house staff is vulnerable to being headhunted as they are among the small national pool of Oracle Student talent. (Evan Montague is described as “being the most knowledgeable person about Oracle Financial Aid in the country” by financial aid consultant Nancy Sinsabaugh. He has since left LCC.) Consulting firms or even other colleges are often willing to pay 50% or more salary premiums when they find specific talent they need.
   ii. We noted that LCC actually depends on outside consultants for the higher end technical and development tasks. There too, LCC is vulnerable to loss of support. Turnover among consultants is always high. Consulting firms are less likely to be willing to replace Oracle Student Systems consultants (and invest in the required training) when they see the looming demise of the Oracle Student system product.

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Oracle Financials and Human Resources are mature programs, albeit complex, expensive and challenging to operate, that were developed for the commercial sector and successfully migrated to the higher education environment.
10. **The electronic campus**: As a closing comment, we note with some puzzlement LCC’s response to our request for data. When we begin gathering documentation we request it in electronic form wherever possible. We *re-emphasize* that in our written data request. LCC’s technology vision has been, for at least the last five years, the creation of a paperless, digital operation. However, when we received information from LCC, almost none of it was provided electronically. Where is this electronic campus?
Survey of LCC Technology

Collegis provided LCC with the ability to participate in an online survey of technology.

Survey Population:
LCC stated that they distributed an invitation to participate in this survey via email to all Trustees, Executives, Managers, Staff and Faculty. LCC chose not to distribute the survey to students, stating they had no effective way to handle that process, raising the question of the degree to which LCC has achieved its goal of the “electronic campus”.

The survey design accepts only anonymous responses. This maximizes the returns. However it leads to two issues that evaluators must keep in mind: (1) The respondent self-selects their Group (Executive, Faculty, Technology Staff or NON-technology staff, etc.); (2) Because LCC uses firewalls, the IP (network identifier of an individual computer) is not unique – in other words, we have no way of determining if a single person chose to complete the survey more than once. While it is unlikely that this is a problem, the remote possibility does exist.

The responding population included:

<table>
<thead>
<tr>
<th>Group (Self-identified)</th>
<th># Responding</th>
<th>% of Respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Executives</td>
<td>3</td>
<td>1.0%</td>
</tr>
<tr>
<td>Faculty</td>
<td>126</td>
<td>43.6%</td>
</tr>
<tr>
<td>Management- Non-technology</td>
<td>48</td>
<td>16.6%</td>
</tr>
<tr>
<td>Technology Management</td>
<td>11</td>
<td>3.8%</td>
</tr>
<tr>
<td>Staff- Non-Technology</td>
<td>70</td>
<td>24.2%</td>
</tr>
<tr>
<td>Technology staff</td>
<td>27</td>
<td>9.3%</td>
</tr>
<tr>
<td>Student</td>
<td>2</td>
<td>0.7%</td>
</tr>
<tr>
<td>Trustee</td>
<td>2</td>
<td>0.7%</td>
</tr>
<tr>
<td><strong>Total responses</strong></td>
<td><strong>289</strong></td>
<td><strong>100.0%</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Campus</th>
<th># Responding</th>
<th>% of Respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Main</td>
<td>239</td>
<td>82.7%</td>
</tr>
<tr>
<td>West</td>
<td>38</td>
<td>13.2%</td>
</tr>
<tr>
<td>Other</td>
<td>12</td>
<td>4.2%</td>
</tr>
<tr>
<td><strong>Total responses</strong></td>
<td><strong>289</strong></td>
<td><strong>100.0%</strong></td>
</tr>
</tbody>
</table>
Technology Survey Questions Focusing on Technology Human Resources

These are the questions included in the survey which focused on the human resources (staffing) available to support LCC’s technology needs.

1. Effective Staffing - Staffing effectiveness - The central IT organization is supported and effective in its efforts to recruit IT professionals, provide them with professional development, and retain the best among them.

2. Strong Service Mentality - Service mentality - The IT organization has a strong customer service mentality.

3. Good IT Management - Management - The central IT organization and its resources are well managed.

4. Good IT Leadership - Leadership - The IT organization works collaboratively with academic and administrative units to accomplish tactical goals and to plan for and support the organizational aspects of an innovation infrastructure and culture.

Responses are aggregated into two groups: responses from

1. Technology Managers & Technology staff and
2. Responses from everyone else (Trustees, non-technology executives, staff, and faculty).

The separation of “technology dept” and “non-technology dept.” is important as they have very different views, as the results demonstrate. Our interpretation of these results: they indicate just how disconnected the technology department is from the needs and views of the rest of LCC – i.e. divorced from the people they are hired to serve.
Technology Survey Questions Focusing on Strategy, Technology and Institutional Change

1. IT in LCC Leadership - Technology participation - The IT leader participates in the cabinet or other campus leadership groups.
2. Cabinet Wrks - Cabinet relationships - Cabinet relationships are functional, and there is executive level agreement on the need to improve institutional performance.
3. LCC+IT Linked Strategic Plan - Strategic plan/planning - There is an institutional strategic plan or planning process that incorporates IT priorities and links them to institutional performance goals and indicators to guide daily work, track progress, and revise goals/indicators based on evidence and changing priorities.
4. Good Instituti‘l Intelligence Info -Institutional intelligence support - There is a customizable, real-time, or near real-time, software reporting system that extracts and reports key indicators of institutional performance for tracking progress and supporting evidence-based action.
5. IT Process Change Exper - Change experience - The institution has experience with IT-enabled service process redesign strategies that can improve academic and administrative performance while also reducing unit costs.
6. Fac-Exec Aligned in Oblig - Faculty and executive leadership - The faculty and the executive leadership are collaboratively aligned and mutually engaged to meet performance obligations through IT-enabled innovation

Responses are aggregated in the same manner: (1) Technology department managers & staff and (2) Trustees, and non-technology executives, managers, staff and faculty.
(3) Technology Managers and Staff

Within each group, the comments are separated into the four broad areas covered by the survey (as denoted by the yellow highlighted subtitles that separate the comments into sections).

The open comments reflect the quantifiable ratings – in other words, the majority of the open comments reflect dissatisfaction with one or more of the aspects of LCC’s technology. As in all institutions, there are always some individuals and offices who find that they are well served by technology, even if they are a minority. The following lists include representative quotes from the total large pool of responses, with the majority (negative) and minority (positive) views included.

The Technology Departments’ management and staff have a different view of LCC’s technology which is generally more positive, as noted earlier. Even within the technology departments, however, there are still issues with the technology operation. The responses from the technology staff for the most part do not lend themselves to a clear “Majority-Minority” categorization. For that reason, the technology staff responses are categorized as “PRO” and “CON”.

### Open Ended Responses to Technology Survey
Unedited, Sorted by Responding Group and Question Category

**Responses from: Faculty**

<table>
<thead>
<tr>
<th>MAJORITY VIEW</th>
</tr>
</thead>
</table>

**Open Comments in Response to Questions on the IT Environment, Accessibility and Usability**

<table>
<thead>
<tr>
<th>Collaboration suite has the worst usability of any application of this type that I have ever seen. Plus, the actual implementation of it and organization of key information is even worse. The web based email is terrible, file saving is inconvenient and slow, no single-log in working. I personally have a very slow laptop with a battery that only lasts 1.5 hours. Due to this, it just is used as a desktop since the short battery life makes it difficult to move around unless have constant access to power supply. The online registration system is the WORST I have ever tried to use. I am pretty good at navigating web apps and databases and I have the hardest time using the registration system. Not user friendly one bit and it seems that no one really cares— if no one does anything when students can't sign up for courses for months at a time, how can we have confidence that anything will be done to improve something like usability... Usability is KEY to application successes and LCC seems so stuck in the cycle of just trying to make things work that they haven't even considered usability. If they have considered usability, they did a terrible job.</th>
</tr>
</thead>
<tbody>
<tr>
<td>The systems are not easily accessible, they have multiple log-ins, and user un-friendly prompts. Oracle and Angel are not always compatible</td>
</tr>
<tr>
<td>Decisions and thinking about IT services are no longer shared with the campus, they just happen. Angel is partially an exception.</td>
</tr>
<tr>
<td>Systems are not intuitive, and at times very frustrating</td>
</tr>
<tr>
<td>The IT department ignored my warnings that Angel was not working for 7 months. My course started two weeks late because of the last minute fix. The mail services are so unreliable I have used an outside email for years.</td>
</tr>
<tr>
<td>We have been so overwhelmed by changes at LCC that no one can keep up. We need to slow down. Everything is always changing from course codes to phones and every form of tech we use. It is crazy. But I love it here</td>
</tr>
<tr>
<td>Responses from: Faculty</td>
</tr>
<tr>
<td>------------------------</td>
</tr>
<tr>
<td>Oracle student systems are a nightmare - poorly-designed screens and difficult navigation.</td>
</tr>
<tr>
<td>- ANGEL has been sporadic in terms of reliability, and for many support services, there is only one person with authority to provide support, e.g., creating new master courses, adding people to course sites, etc. Single point of failure is always a bad idea.</td>
</tr>
<tr>
<td>- Oracle email mangles attachments; I can't even use it to send attachments.</td>
</tr>
<tr>
<td>- Classroom COW support/maintenance is inadequate. I teach in the Writing Program; Week 14 is ALWAYS the week we rely on the COWs for the equivalent of the final exam. In both my classes this semester, I had to call tech support to get the printer to be recognized by the network - in one case this didn't even happen before the 2-hour class ended.</td>
</tr>
<tr>
<td>- There is very little, difficult-to-find, and inadequate support for any pedagogical technology that's even remotely advanced. For instance, lack of campus infrastructure and help makes it difficult to do things like post MP3s of lectures or learning modules for student download, or to stream video. (I use my own ISP for these services.)</td>
</tr>
<tr>
<td>- It would be an extreme improvement if users could create their own mailing lists for ad hoc purposes, rather than having to go through central IT to get a list created. Much collaboration is stifled because of the difficulty.</td>
</tr>
<tr>
<td>- Much collaboration is stifled because of the policies with respect to department resource libraries in ANGEL. We circumvent this by creating groups in ANGEL rather than using the 'official' libraries.</td>
</tr>
<tr>
<td>- Don't even get me started about the web site. I've been here full-time for 3 semesters and I am still not listed. Finding information is often difficult if not impossible.</td>
</tr>
<tr>
<td>- Late night and early morning help desk folks are not as helpful as the day people.</td>
</tr>
<tr>
<td>The new Oracle student system has been a downgrade according to student reports that I have received. They report that it is not user friendly. They state that it is hard to figure out how to register or drop and add. They report that it is difficult to know if they have actually registered or not.</td>
</tr>
<tr>
<td>The application process for students is very hard and cannot be completed without help. The process to apply for on campus jobs is very hard and cannot be done with out help. The Finance tab is very confusing.</td>
</tr>
<tr>
<td>IT not reliable enough for me to use routinely in the classroom, especially COW's. Don't have class time to troubleshoot.</td>
</tr>
<tr>
<td>Some of the training is not hands on enough so you don't really learn the new system. It is also hard at times to find a time to go that fits in with your schedule so it becomes stressful to be trained. What I do not find helpful is all of the things are available through Oracle and Starport - I spend hours sometime looking for what I need when it is something that I only use once or twice a semester; the logic of what it is called or where I look for it is different than how I think so I get very frustrated trying to find support documents, or where I go for a form or instructions.</td>
</tr>
<tr>
<td>Why do we keep switching and having to relearn stuff?</td>
</tr>
<tr>
<td>Workspaces are not easily searchable or user friendly and provide a very poor file management interface for multiple uploads and downloads. Work spaces have made file sharing at LCC unnecessarily difficult and time consuming.</td>
</tr>
<tr>
<td>Help Desk results in long holds, cutoffs.</td>
</tr>
<tr>
<td>The computer on my desk is horrible. It takes sooooo long to log on and off. If I open too many applications at once, then the whole thing shuts down. By too many applications I mean 3 or more. In the computer labs for students there are brilliantly fast computer with new monitors and I am working with a dinosaur on my desk. Shouldn't I at least have access to computers that are as good as the ones that are provided for the students?</td>
</tr>
<tr>
<td>Technology has been installed in classrooms but there has been no training on how to use the equipment. It's up to the instructor to figure out how the equipment works. Angel has been a challenge.</td>
</tr>
<tr>
<td>Even though we have starport, we still have to sign into many other applications from the portal.</td>
</tr>
<tr>
<td>There should be more assistance in the evening from the IT staff especially for new systems and the new equipment.</td>
</tr>
</tbody>
</table>
**Open Ended Responses to Technology Survey, Unedited, Sorted by Responding Group and Question Category**

**Responses from: Faculty**

<table>
<thead>
<tr>
<th>The web portal is convoluted and confusing. Most other colleges in MI have more easily navigated home pages. Ours is too busy and not easily understood by outsiders. My students grudgingly use it as a last resort. Access to information is difficult because there doesn't appear to be any thought given to ease of navigation or grouping of tasks in a logical manner. There is way too much small text on the front end and the color scheme is unpleasant. Basically a cluttered and unfriendly interface that needs to be started over from scratch. Technology upgrades seem not to be made based on our mission to make effective teaching a priority. If any professors who actually use the stuff on a daily basis were consulted, it is not obvious. The perception is that decisions are made from a totally top-down model like GM has been so successful using. We are NOT that big and we SHOULD make it a priority to consult part-time and full-time faculty before implementation. Many part-time professors are not adequately resourced or given the training to master the new technology and this is true of full-time faculty as well. The iLearning system is difficult to embrace.</th>
</tr>
</thead>
<tbody>
<tr>
<td>I keep all of my critical files on my laptop and never use the workspaces because too many times workspaces are unavailable at critical times. No real business would put up with the amount of downtime our system has. Also, the amount of storage available in the workspaces is too small for my files. When I asked for more workspace, I did get more, but I need about 1.5 gig.</td>
</tr>
<tr>
<td>Often the help desk personnel are condescending. I know that many college employees are not very computer literate, but that is no reason to talk down to them.</td>
</tr>
<tr>
<td>College applications, such as expense reports, are slow and difficult to use. Those of us who only enter expenses once or twice a year always need assistance.</td>
</tr>
<tr>
<td>The course registration system is awkward and complicated. There are too many places where you need to know something to get it to work. Why aren't the semesters presented in a logical order (for example Oracle is the worst. Given its bad reputation in the business world why was this system ever selected?</td>
</tr>
<tr>
<td>Angel will not support the CADD program. We cannot open, Save Target As, or use Angel e-mail to transfer CAD files. I don't believe that size is an issue, at least not in the beginning level courses. The software now uses only 52% of what it previously used for file space. I would like to have the file extensions added to the supported list. Otherwise Angel is of little use to our program. We also had problems with Workspaces this semester. Students couldn't access Suburban for several weeks. The problem was taken care of.</td>
</tr>
<tr>
<td>In regards to the Help Desk question. Availability of the Help Desk isn't an issue, as they are available 24/7. But, what the Help Desk can do is of little value. Usually trouble tickets are taken, and it takes a long time for problems to get fixed. This discourages students because they are usually working on a deadline. I have received numerous complaints about the inability of the Help Desk to assist them. Therefore, availability isn't an issue, but the assistance offered is severely lacking.</td>
</tr>
<tr>
<td>Ease and coherence of use—If I could find a button stronger than Strongly Disagree, I'd click on it. Oracle is the most convoluted, non-intuitive system I've ever had to work with. It operates on the 40-click philosophy: anything you want take 40 clicks to get to it. I took the training on the web conference feature, and it worked quite well in convincing me it would never be something I'd want to use with students—it would take two weeks of instruction and practice in a f2f classroom to get them comfortable with it. And if the college ever decides to use Oracle software for classroom management software, I will move immediately to an all chalk classroom, and I'm one of the original designers of the online courses when the Virtual College first started.</td>
</tr>
<tr>
<td>Furthermore, on-campus support of technology in the classroom is good when a problem arises (if you're quite stern with the Help Desk). But maintenance, prevention and upkeep are dismal. For example, when using a computer classroom, or even worse, the COWs, fewer and fewer computers work as the semester progresses. Yes, faculty could be more proactive in reporting problems. However, preventative processes—having techs check computers and teacher bunkers periodically (at least once a week, or at least bi-monthly) would go a long way to making sure that the technology is available when faculty need it.</td>
</tr>
<tr>
<td>Finally, the navigation of the web page is remarkably awful. When it takes 40 clicks to get the course schedule, only the hardest of souls is going to stick with trying to find it. It's almost like we as an institution really don't want students to find when classes take place!</td>
</tr>
</tbody>
</table>

I could go on—computers without floppy drives when most students still used them, choosing Angel when faculty during finals week had to choose between canceling finals or reviewing CMS presentations, starting multiple new systems in the same semester—more than once when we should have learned doing so was ludicrous, dismantling Virtual College just as it was beginning to make some
Open Ended Responses to Technology Survey,
Unedited, Sorted by Responding Group and Question Category

Responses from: Faculty

real inroads in helping faculty use the CMS software effectively and begin improving the quality of online courses—well, the
management of technology at this college in the last few years has gone from bad to worse to unimaginably ridiculous.

<table>
<thead>
<tr>
<th>MINORITY VIEWS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Open Comments in Response to Questions on the IT Environment, Accessibility and Usability</td>
</tr>
</tbody>
</table>

The Oracle system is a new one and has its share of bugs. Most people understand that and are willing to work to solve the problems.

The help desk has been far more helpful and friendly than any I worked with in industry.

I believe we have an outstanding IT Department with great support. The only problems I have ever encountered were not
momentary glitches had to do with human error and were corrected as soon as they were discovered.

I appreciate how the classroom computers are always being updated.

<table>
<thead>
<tr>
<th>MAJORITY VIEWS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Open Comments in Response to Questions on Technology Department’s Human Resources (technology staff)</td>
</tr>
</tbody>
</table>

The IT organization is arrogant and assumes that all faculty are ignorant Luddites. Some of us actually have quite a bit of IT
background - but it's totally wasted here.

The IT organization is clearly in love with the sales reps from big name companies. I worked in IT in various management capacities
for 25 years before coming to LCC as faculty in 2002. How anybody could ever have planned for a switch over of a critical system to
an Oracle-based without parallel ing the systems is beyond me. I will grant that an Oracle-based system is generally pretty bullet-
proof once it is up and debugged. But the rep throughout the industry is that Oracle (like MS) way-over-promises, takes 2-3 times the
amount of time and effort to get it established properly. Gullibility is not an admirable trait in IT management.

We no longer have the programming talent to support campus efforts.

IT staff are not consistently or across the board open to constructive feedback re their processes, policies, etc. When I have shared
concerns they have often been met with a defensive tone/stance so I have stopped offering feedback.

It has been next to impossible to get reports and other service requests from IT staff due to poor staffing levels and the need to pull
staff to address FA issues.

…when I call for help, I generally receive it. However, they always assume that you're the lowest end user. The question have you tried
powering down?” is always asked instead of “what have you tried?” I've also felt like I was troubling anyone at the help desk.
Student help is almost nil. what was really amazing was the CIO once had the balls/stupidity to tell me that I didn't need more than
50 mb of email space and that no one would even give me that much. I never did get a reasonable explanation as to why my free
Google mail account gives me 2gb

It takes too long to get assistance.

Collaboration with academic units seems low— too many changes right at end of semester when grading is intense for example. Lots
of ongoing questions about collaboration suite costs and decision. Seems like there is a great deal of unhappiness among IT staff— not
doing a good job treating these people right.

The problem with IT is that it is understaffed for the job it is doing.

I think I've pretty much expressed my dissatisfaction above. The primary problem has been that IT leadership has been remarkably
reticent to talk, especially to faculty. When we used to ask the CIO to meet with the Virtual College liaisons several years ago, he
would never do so.

And the administrator of the CMS software tends to be disdainful of faculty—any problem that arises he blames it on the
incompetence” of faculty rather than dealing with the actual problem.

I have been laughed at when I called the LCC1” help line. Our "teaching" tech has release time to perform other responsibilities for
our (very corrupt) leadership. Lansing Community College's technical support would be laughable if it wasn't for how much damage
has been done to so many people."
### Open Ended Responses to Technology Survey,
Unedited, Sorted by Responding Group and Question Category

## Responses from: Faculty

### MINORITY VIEWS

**Open Comments in Response to Questions on Technology Department’s Human Resources (technology staff)**

Some areas of the IT organization seem to promote a service mentality while it is not readily apparent in other areas. Help desk members and PC techs do promote a service mentality—friendly and helpful!

The staff appears to understand the immediacy of the teaching situation and is extremely responsive and cheerful about it!

Sharon Keller has been very helpful! Not so much with some other people.

IT staff have been able to help on most occasions and they usually respond in a timely manner.

The technicians that come to my classroom are great and act totally professional.

### MAJORITY VIEWS

**Open Comments in Response to Questions on LCC’s Technology Spending and the Return on Investment from that Spending**

Nothing is cost effective when people are in constant pain. That includes the IT staff themselves. If you need a help desk it means you are in trouble

The campus has touted ROI for quite some time, but I suspect that the ROI numbers are not based in fact. We have made extensive changes in what we charge our students and ROI has gotten worse.

If current costs include the time other (non IT) departments and individuals spend using the systems, I don’t think we are getting a good return on our investment. It feels like many of the responsibilities and tasks have ended up on the shoulders of departments or individuals who need to be spending time on the tasks they were hired to do such as teaching, leading, planning, etc. Instead, many of us spend an inordinate amount of time trying to navigate systems that are not intuitive or easy to follow when we hire someone, fill out an expense report, travel expense, etc.

Some of the Oracle systems have decreased productivity by making tasks more time consuming.

I do not have data to answer the IT budget questions that were asked but I am concerned that we are not measuring or perhaps even considering the human capital that has been spent by students, faculty, and staff learning to work with systems that have less user friendly interfaces and deficiencies that have required work arounds.

LCC needs more emphasis on regular maintenance of existing technology (for example classroom computers) and less emphasis on new technology that often does not work properly.

If it doesn’t meet the needs of the employees and students, the cost is irrelevant. It doesn’t work!

It seems that tons of money is going into making things better and for two years I have seen nothing that is better. We switched to Oracle so that everything will run more smoothly and now I cannot even drop a student from my class on-line...I have to go to an office and fill out a form. Also, the system” doesn’t even know that I am a faculty member....it will not let me register for classes that have prerequisites that are lower than for the classes that I am currently teaching. Also

IT is expensive—yes. But we need to use our money more wisely to develop or buy highly functioning applications that help us in our core work--that of serving students. Registration systems that are confusing or broken are not helping us. Confusing, convoluted employee and student systems are equally bad—drain productivity and make LCC look like we don’t know what we are doing.

Although I do not have access to specific information, it is obvious that ISCD is way over their head on this area.

I know that anti-virus updates are expensive, but using out of date anti-virus software could prove a false economy at some point.

The college has spent way too much money on tech systems that are too complicated and require too much training to use for 80% part-time faculty and 2 year student average participation with student workers and part-time help with a high turn-over percentage. A system most people cannot fully use is useless.

I wonder if the costs that LCC has put out for Oracle are really affordable, considering all the problems, delays, added staff hours for problem solving, etc.

While software may be reasonably priced, the added expense of hiring outside experts to repair problems with the Oracle software as well as the negative press and negative experiences of users likely outweigh any savings in purchase costs.

### MINORITY VIEWS
## Open Comments in Response to Questions on LCC’s Technology Spending and the Return on Investment from that Spending

- IT expenditures within the Art, Design & Multimedia Program have generally been well justified and yield a good return in terms of student development.
- Improvements in lab and classroom equipment have provided a noticeable return on investment as far as enhancing the teaching and learning environment at LCC.
- Standardization is obvious and I would think certain to provide economy of scale.

## MAJORITY VIEWS

### Open Comments in Response to Questions on LCC’s Institutional Strategy, its Alignment with Technology and LCC’s Capacity for Technology-Enabled Institutional Change

The IT leader may sit at meetings but he does not participate—every meeting I have ever seen him at he checks email or does instant messaging the whole time. During one board meeting a student was crying about her financial aid woes and technology difficulties and he didn’t even listen. Presence is not participation. These sorts of actions taken by a leader are a disgrace and set the culture for the whole IT area—sends the message that stakeholders don’t matter. I believe there is a strategic plan for technology but I am not sure of its effectiveness. Regarding change—we change, we spend a great deal of money; it makes life worse for many of us. It’s really the Oracle collaboration suite stuff that is so horrible. I hope that this is not the case with all employees, but it is the case for faculty. 

I think we spend too much time and money incorporating IT’s priorities and not nearly enough on faculty and student priorities.

The ITSAC committee should have been involved in each decision that was made concerning design and equipment is all the new computer classrooms. There was no input from this committee concerning West Campus, East Campus or new classrooms in GVT. What is the purpose of this committee?

The IT organization may well be aligned with the top institutional management, but unfortunately, both are totally divorced from anything that really happens at the level of serving and educating students.

The last couple IT leaders did not have very much experience working with IT prior to their appointments. This has led to some poor decisions especially those related to the switch to the Oracle system. Apparently the Oracle software is being beta tested at our site! LCC employees have spent a very large amount of time working on the Oracle system to get it ready for production but there were still many problems once the system was implemented.

Lansing Community College’s Strategic Plan is not worth the paper it is written on. [CIO] is an unreliable and unresponsive leader who should have lost his job a long time ago with the first Oracle debacle. It is unconscionable that he is still here after the student financial aid mess of the fall of 2005.

I have had great experiences on a personal level with the IT staff. I think we have just been out of control with all the changes. Too much money on bricks and mortar and IT updates with a lack of support for the employees. I think we have great people here. We just need a return to common sense. Price Prichitt should be shot and buried as far as I am concerned.

Sorry, but I don't see the faculty and executive leadership collaboratively aligned on any given issue, let alone IT. I'm not convinced that strategic planning is linked to instructional issues, or changing instructional issues, either.

Faculty were consulted on the change to Angel, but are often left out of technology decisions in general. It never feels certain that we will have a voice on future changes—even the involvement on Angel was the initiative of one staff person, and did not seem to reflect an institutional commitment to faculty involvement.

The IT leader [CIO], while a leader in using technology, doesn’t seem too concerned about the abilities (or lack of) those folks working in the trenches with staff and students. Sometimes we are asked for our input but it often feels like the outcome has already been determined.

Re: Institutional Intelligence: experience in the academic areas is that data is often incorrect when supplied to us for reporting and improvement purposes. Incorrect data reported to the State of MI can cause problems in receiving funding.

Most every major software change has been badly done. Student aid just the latest.
<p>| Open Ended Responses to Technology Survey, Unedited, Sorted by Responding Group and Question Category |</p>
<table>
<thead>
<tr>
<th>Responses from: Faculty</th>
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<tbody>
<tr>
<td>It is my opinion that the IT area has not met the needs of our community since the decision to switch to Oracle took place. I have had service requests for months that still have not been fulfilled. I think the whole area is unresponsive to the needs of all but a few areas on campus. This has struck many areas of my professional life, from student issues to expense reconciliation. This area has set up barriers that prevent an employee from receiving timely reports and timely reimbursement for expenses.</td>
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Get rid of Oracle.

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<td>Open Comments in Response to Questions on LCC’s Institutional Strategy, its Alignment with Technology and LCC’s Capacity for Technology-Enabled Institutional Change</td>
</tr>
<tr>
<td>The one exception is the switch to MS Outlook instead of lotus notes. This was a good change! I also really like Angel and find it easy to use and more reliable than Blackboard.</td>
</tr>
</tbody>
</table>
### MAJORITY VIEWS

**Open Comments in Response to Questions on the IT Environment, Accessibility and Usability**

Training for Oracle was a joke, especially when compared to our Banner training. Everything changed by the minute and we in the front trenches were not advised of how to deal with frequent Oracle changes. Not to mention daily Oracle crashes.

I have only been working as the Physics lab technician since October, but my experience has been that none of the statements listed above have been completely true. I have had a great deal of difficulty getting the proper accounts set up for my use. I have gotten wrong information on several occasions from the help desk, in addition to on at least one occasion getting a help desk person with a negative attitude. As for training and hands-on support, if any is available, I have not been made aware of it.

Many of the programs that I try to use are not always reliable. I have to cross my fingers and hope they work when I open them.

No system seems to exist to follow up when we call in for repairs on college computers, either no one shows up or no follow up is made as to repairs or repairs are not completed.

Help desk is available but see above note.

When systems are upgraded (registration, financial aid) there are always problems and students complain.

Have difficulty accessing LCC applications off campus. Applications not accessible by all browsers. Training links do not work, training is ambiguous and arbitrary. Updates and upgrades are not announced so that users may know how to use a process one time, but a week or two later the procedure has changed without notice and it becomes a guessing game. Not everyone is a "techie" who has endless hours to devote to learning the applications. Not everyone has the same learning style--more and more the "training" is only available on-line and is of limited value. Too much money being thrown at technology without any thought to making it user-friendly and practical."

When the system goes down or there is trouble with a server, 99 times out of 100, absolutely NO communication is broadcast to users of the system. A simple broadcast message or e-mail could be sent indicating that the campus is experiencing problems; this would allow users to know that there are problems and avoid unnecessary frustration and calls to the help desk.

We have many difficulties with the reliability and accuracy of information in the HR/Payroll area. We are constantly monitoring and auditing information to make sure it hasn't inadvertently changed for whatever reason.

The people who answer the phone at the Help Desk are very helpful to their level of competency and responsibility. If anything requires assistance beyond their level, the response is usually slow, incomplete, and inadequate with no clear lines of accountability or feedback. For example, I have unresolved issues that I reported in February, and I recently discovered viruses on my computer that I had called about for several months. The most recent tech discovered them, but several techs prior did not and reported that everything was okay.

RE: Training - I believe there needs to be a more comprehensive technology overview for new hires. We are increasing dependent on technology now and it can be frustrating to new employees on how to get into" all the LCC systems they need access to properly do their new jobs."

Wait time with Help Desk sometimes long. Customer service could improve, as I have felt several times that the techs have been rude or short, don't explain things in depth, or don't take issues seriously (such as, I think I might have an email that could have a virus attached."  "Delete it."  "Don't you want me to forward it

I agree that the basics are there; however, the Help Desk often cannot respond with immediate help (? training). I also don't think much of anything about our systems is intuitive at all, which hampers effectiveness. I may use a particular system/function 1 - 2X/semester or year, and it's difficult to remember how to use it when I don't do so frequently.
**Open Ended Responses to Technology Survey, Unedited, Sorted by Source and Question Category**

**RESPONSES FROM: Non-Technology Management and Staff**

<table>
<thead>
<tr>
<th>Frankly, I'm unsure whether or not all aspects of the student system are consistently stable. There hasn't been a communication from IT stating that financial aid, various aspects of student records access and other related functions are consistently working appropriately and have been fixed.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Training is available online, with some face-to-face. Online, tutorials are great. However, there should be options for face-to-face training on all software and systems available to employees and students.</td>
</tr>
<tr>
<td>Ease and coherence of use -- E-mail and street mail list generation used to market and recruit new students is being forced into self service. This is totally wrong. There are very involved reports (pulling demographic data from Banner and Oracle on a number of different levels). There should be dedicated IT professionals in ISCD that should generate such reports in a timely fashion. SQL, data manipulation in Oracle should be the responsibility of the trained professionals in ISCD who do this kind of work for a living. Everything on this campus cannot be self service for all employees. And for students, telephone registration was re-instituted because all students do not have easy access to computers. They should not be forced to register online if they choose not to. LCC is an open-door institution that promises access to all students. That access should come in all forms, not forced online. Web registration is great for many of our students, not all of our students.</td>
</tr>
<tr>
<td>…Help desk staff are great. The breakdown is in not having enough staff in order to meet the needs for information, reports, questions related to Oracle causing delays, frustration, and inability to complete work in a timely fashion. Follow-up (nagging) required in order to complete. Training not always within a timeframe needed. Not have information needed to answer life-cycle updates question.</td>
</tr>
<tr>
<td>Service is not consistent, inadequate. The system itself is cumbersome and not linked appropriately for ease of application.</td>
</tr>
<tr>
<td>Infrastructure is no less than a nightmare.</td>
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<tr>
<td>Sometimes I have to log on as many as 12 times per day. There is not a smooth interface between various Oracle &quot;hats&quot;. I and my coworkers feel like our comments fall on deaf ears and that there is no process (at least no process that is not a black hole) where we can give comments and have them addressed.&quot;</td>
</tr>
<tr>
<td>Regarding life-cycle updates, the IT organization provides TOO MANY upgrades in too short a time frame. Training on the new systems is inadequate. There was nothing wrong with Banner and no reason to replace it so soon after its implementation.</td>
</tr>
<tr>
<td>Oracle is unpredictable, and therefore I view it as unstable. The other IT Infrastructure systems (network, angel, etc. seem highly stable.)</td>
</tr>
<tr>
<td>I don't believe sufficient job aids exist to assist end users in performing tasks in the Finance system - particularly expense reports. For an average faculty member to complete an expense report correctly involves much more work and personnel time than it should. In addition, training on the Finance system has been minimal at best, and not just for faculty, but staff who use it every day.</td>
</tr>
<tr>
<td>There is no single logon access. There are often downtimes that keep us from doing our work and gaining access to workspaces, sometimes for several hours. No campus wide customer relationship management software causes labor intensive manual entry and multiple entries of identical data, plus there is no campus wide sharing of business being done with outside organizations.</td>
</tr>
<tr>
<td>As the institution moves to single service software…adequate planning must proceed in order to grant access and competent training to all staff that rely on the information contained therein.</td>
</tr>
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**MINORITY VIEWS**

**Open Comments in Response to Questions on the IT Environment, Accessibility and Usability**

<p>| The system architecture is generally stable but there are occasions when all users here at the West Campus go down at one time. This is very bad considering the number of users and the productivity lost when this happens. On the other hand the Oracle based systems provide a very functional enterprise wide system which for the most part save considerable man hours in almost every function. I have been present for the launch of several of the systems and while each has had difficulties on the launch, after resolution of the initial problems they provide a much improved system over that which we had previously. |
| The first run of a new system is usually difficult. But, the IT Service works very hard to get this working better. In the long haul, we have a very effective system. Start Ups are usually a challenge. |
| ISCD is doing a great job providing and supporting IT services for us. |
| The technicians that show up to work on our computers have always been capable and friendly. |</p>
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<tr>
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<tr>
<td>Open Comments in Response to Questions on Technology Department’s Human Resources</td>
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<tr>
<td><em>(technology staff)</em></td>
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<tr>
<td>Although the ISCD division is responsible for systems, they rarely develop effective systems or involve the front end users in the implementation plan development. This survey is a good step in the right direction.</td>
</tr>
<tr>
<td>It would appear that the central IT organization depends on part-time people who are often not on campus to deal with problems. While I have only worked indirectly with the network infrastructure support people, it took them most of fall semester to resolve a problem with being able to log in to the wireless network on the 4th floor of the Arts and Science building from the Computers On Wheels (COW) laptop computers. There also does not seem to have been an adequate plan for upgrading and expanding the COW program to provide sufficient laptops for use and to maintain their reliability.</td>
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<tr>
<td>They are very enthusiastic about new and innovative ideas... but not very interested in making sure that the current technology is working effectively.</td>
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<tr>
<td>The biggest problem I think we have is the lack of building from the user to the IT system. We seem to have the system, then force the user to accept what the system will do. Not enough questions have been asked of users FIRST, before the application is developed and deployed in my opinion. Again, nothing is intuitive!</td>
</tr>
<tr>
<td>The system technical staff are overworked and under-staffed. Too many consultants are hired, when sufficient IT staff were in place prior to the new ERP system (Oracle) implementation. Many of these consultants would not be needed had IT staff remained in place, proper staff been allocated, proper testing taken place and department recommended timing been taken into consideration.</td>
</tr>
<tr>
<td>The IT staff that I have to work with are very resourceful and knowledgeable - the problem is there are just not enough of them to meet all the demands of critical work that needs to be done to support the departments that depend on them so heavily in the service areas.</td>
</tr>
<tr>
<td>They have too few staff in specialized areas, so it is hard to get responses when needed from the key person in the specialized area as they are always swamped.</td>
</tr>
<tr>
<td>There are great IT professionals in ISCD who provide support and who are effective in what they do. There just aren’t enough of them. All services can’t be self service. Self service is a goal of the IT Master Plan. Report generation should not be self-service (report generation for street-mail and e-mail requests). Requests like this should be available from ISCD within days, not weeks or months or pushed back to the requesting department as self-service. Hire more people to provide this service and support it to the levels needed across campus, particularly in College-Wide Marketing. We have been asked to provide staff that could be trained to run reports we need. Many needed reports require extracting several levels of demographic data from Banner and Oracle then merging it again into a final list — extremely involved and would be very time-consuming, detracting from our department staff completing their primary duties and responsibilities. Report generation should be an IT/ISCD function, not a program or departmental function.</td>
</tr>
<tr>
<td>We need access to data and prepared reports. Additional staffing at the Divisional level may be our best solution.</td>
</tr>
<tr>
<td>Not enough staff to meet the demands causing requests for system information, clarification, and documentation to be less than timely. Always willing to help but humanly impossible to meet all the needs with current staff.</td>
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<tr>
<td>Staffing has been inadequate only because of crisis mode lately.</td>
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<tr>
<td>Administrative support for the HR and Purchasing modules is particularly lacking customer service mentality.</td>
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<tr>
<td>I feel that the Help Desk staff are generally skilled and responsive. At higher levels, I feel that the concerns of my department were not accommodated when the Oracle system was developed.</td>
</tr>
<tr>
<td>LCC has lost too many high quality employees in the IT department. IMHO the reasons are poor management (slave-driver mentality of CIO), poor morale, and budget cuts.</td>
</tr>
<tr>
<td>Based on the difficulty required to use the applications, the constantly changing nature of what’s offered, the lack of training availability, customer service appears to be a minor concern.</td>
</tr>
<tr>
<td>The IT staff (responsible for surveys) seem inadequate for the assigned workload.</td>
</tr>
<tr>
<td>The staff was given a new student system that was not developed to the point where it should have been used for our major system. There are applications we should have had in August to effectively service our students that we are still waiting for.</td>
</tr>
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</table>
**MINORITY VIEWS**

*Open Comments in Response to Questions on Technology Department’s Human Resources (technology staff)*

Accounting & Payroll has received excellent support from ISCD during the college financial audit as well as on going issues that are occurring due to the unstable leadership in that Dept. The efforts and support are very much appreciated during this time and the future when the Director's position is permanently hired.

I feel that ISCD has done a phenomenal job of investigating the technology available to educational institutions and implementing change that serves the college community, with an exceptional leader ([CIO]) and leadership team. They also understand and support customer service, and encourage all ISCD staff to gain as much knowledge and experience as they can.

They need more help. With an organization this large and being a leader in Technology they work all hours to keep us going, sometimes all night. We need a midnight shift to add patches, test systems, etc., so that our valued ISCD employees are not so overtaxed. They give their all to making sure that LCC is able to function at peak performance, sometimes at the expense of their families, rest and health. A very dedicated group of highly efficient employees.

The pc techs are awesome. Tom Field’s dept. does good work.

I don’t know much about the specific services listed (Distance Learning, Media, etc), but Microcomputer Services and Computer Operations have always been available when I needed them.

The help desk staff and microcomputer support staff are knowledgeable & helpful.

**MAJORITY VIEWS**

*Open Comments in Response to Questions on LCC’s Technology Spending and the Return on Investment from that Spending*

There were an abundance of outside consultants hired to design, build, correct, etc. ERP system flaws; many of which may have been discovered if allowed more testing time and more employee involvement. Additional audits were required upon completion of the consultants work to assess completeness.

I know that many of the items that I have worked on for many months are being coordinated through consultants (particularly EIS). Knowing that consultants are rather expensive, I am skeptical about reported decreased expenses in this area.

I thought we were supposed to save money with an improved IT system. It seems to be the opposite, and we need to spend even more to improve areas of system deficiency.

It appears that most of the expense of the college is for IT, care, update and training of everyone. Administration has consistently shown a lack of planning and connection with those who could provide organization and thought.

Use technology that is proven...quit trying to be cutting edge* and forcing us to work with unproven [systems]*

The College has not been open about the costs of converting to this Oracle system. Enrollment is down. Are systemic IT problems part of the cause?

Given the recent fiasco regarding financial aid, which was locked into technology to the point that some students were denied an education because they couldn't get financial aid, the current costs are much too high and demonstrate a decided lack of return on investment. If students are our top priority, IT as it exists at LCC is standing in their way.

**MINORITY VIEWS**

*Open Comments in Response to Questions on LCC’s Technology Spending and the Return on Investment from that Spending*

NO MINORITY VIEWS RECEIVED
**MAJORITY VIEWS**

**Open Comments in Response to Questions on LCC’s Institutional Strategy, its Alignment with Technology and LCC’s Capacity for Technology-Enabled Institutional Change**

Key components were not fully tested prior to both the HR/Finance implementation and the Student/FA implementation. It was unfortunate that LCC chose not to fully test this ERP system (Oracle) prior to implementation. The previous ERP system (Banner) involved key employees that actually used the system on a day-to-day basis. Several mock registrations were set up and involved key departments to enable cross-system testing to ensure that key processes could be implemented when Banner went live. Departments were consulted, and their opinions were highly valued, when decisions had to be made regarding the timing of when each of the systems was brought up. With the current ERP system, LCC employees and students were used as testers in a live environment. I believe that the Oracle System will be a good system for LCC, eventually, but we didn't need to subject ourselves to all of the negative publicity. A lot of what happened could have been prevented had we allowed more employees to be involved with setup & testing, listened to our departments when they said the system wasn’t ready and not have focused so much on an aggressive timeline for implementation. Employees that spoke up were not heard and either are not employed by LCC any longer or in a different position(s).

… it is always a challenge to find basic data points such as budget information, year end results, etc.

Since the college changed systems more than once and each system required new training and skill, this may have created dissatisfaction and stress on individuals who have to use them. Also, it is not clear why some data is collected or used such as the data gathered from weekly timecards submitted by administrators and non-teaching staff and employees.

Enrollment appears to be the only performance indicator that matters at the executive level. Student success indicators and outcomes are poorly defined and superficially monitored at the executive level.

Costs typically get pushed down to the end users without any recognition that this is done and without budget to support the cost. It feels like an out of sight, out of mind approach.

There is a great deal more work to be done to get the campus back on track with reporting. Experience and availability of data retrieval is limited at this time.

Institution wide (not limited to IT) there is a serious problem as it relates to leadership, communication, and direction from the top. Decision making without fully understanding the net result on workforce. An apparent lack of desire to seek greater understanding, awareness, or seek involvement in decision making process. Cannot answer regarding specifics of IT leader, but overall function of cabinet.

There is an extreme lack of communication and accountability to the staff at LCC of what the cabinet is doing regarding IT.

Basically, I believe that people at IT policy making levels do not have sufficient insight into our student population and the realities of day-to-day frontline student service. We expect potential students to apply on-line; I have a master’s degree, work with Oracle all the time, and still couldn’t make it through the on-line application process. The IT Department needs to Usability testing before they trot out their products. More attention needs to be paid to INTERFACE. Can a normal person understand the directions given? Would language or layout change mean fewer mistakes? I wish Policy Makers at LCC would ask for input in meaningful ways. An all-college meeting with the president will not yield meaningful, detailed comments.

The present IT situation at LCC appears to make it more difficult to accomplish every day tasks that work toward the college’s mission.

The web registration process is not user friendly or intuitive. I constantly hear student (and even staff) complaints and frustration with trying to register. When I hear students discussing their frustrations, I wonder how many students we lose because we have difficult processes and few people to help them. We seem to be in a reactive mode with students rather than preventive.

On-line registration systems stink, angel has problems, and the financial aide systems are horrible. All give LCC a bad name and if it is bad enough it is in the NEWS for all to see, and for all to develop an opinion whether or not it is justified. Why did we turn into a Beta Test Site for unproven software technology?
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The Technology Staff members’ comments do not have a clear “Majority – Minority” split. They are presented here in terms of “PRO” and “CON”

**PRO**

**Open Comments in Response to Questions on the IT Environment, Accessibility and Usability**

The IT infrastructure in place at LCC is one of the best in the country. The institution has committed to technological excellence with budget dollars and ISCD has made the most of it.

The portal pages are currently not individual user customizable, which would be a nice feature to implement, but the applications are accessible from the main page.

LCC has bar none the highest technology standard that continues to rise.

We just went through an infrastructure change. With all new implementations, there were some adjustments that had to be made. The stability and overall soundness of the systems are much better than the previous systems.

I have worked and attended several educational and non-educational institutions, and I have never seen a better IT department then at LCC.

LCC’s IT service gives above and beyond support to its users.

**CON**

**Open Comments in Response to Questions on the IT Environment, Accessibility and Usability**

There are a number of problems with the starport/angel/oracle system in general. In starport, students should be assigned and given an email AND file space upon creation of their TUID, rather than having to request those items. It would save students a lot of hassle, when they realize they suddenly need to save a file that is too large for a disk, but they didn't know they had to request file space. Or when they need to email an instructor, but didn't know the email request process can take up to a week. Also, adequate instructions that are linked to on the FRONT PAGE of starport - for using email, file space, signing up for classes, and entering the Angel system - should exist in place of the what's new"

In my experience, ISCD is very selective regarding the technologies it supports, and those it doesn't. I have found no comparable model for what we do, and I have seen several models that, in my opinion, provide a better TCO for the organizations they support.

The new student system is cumbersome and much more difficult to use than our previous system. Many staff and students I have spoken with say the system is very difficult and confusing to use and makes everything harder.

**PRO**

**Open Comments in Response to Questions on Technology Department’s Human Resources (technology staff)**

During the implementation of the ERP application, the IT division worked with functional staff from areas over the campus in defining the processes and implementation needs.

Excellent staff. All staff members perform well above expectations. Always willing to help. 110% effectiveness. Very few issues left un-resolved. I cannot praise these teams enough.

Regular meetings are held with several academic areas on campus. If there is a lack of collaboration with any area is solely due to that area not participating even when often encouraged to do so.

I believe that the IT staff has a strong customer service attitude. Some system implementations need to get more campus buy-in/understanding before going live.

**CON**

**Open Comments in Response to Questions on Technology Department’s Human Resources (technology staff)**

There are more functional type personnel in IT than technical personnel.

IT is understaffed, and I think our mental health, ability to be organized and communicate has suffered. The IT staff continues to give 110% at all times, regardless of what is going on.
### Open Ended Responses to Technology Survey, Unedited, Sorted by Source and Question Category

**RESPONSES FROM: Technology Management and Staff**

<table>
<thead>
<tr>
<th>PRO</th>
<th>Open Comments in Response to Questions on LCC’s Technology Spending and the Return on Investment from that Spending</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Very good management of resources.</td>
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<tr>
<td></td>
<td>Economies of scale are easily demonstrated by the number of PCs and laptops that are ordered by the hundreds that result in fewer images, technician familiarity and deployment, and warranty information.</td>
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<td></td>
<td>The Technology Master Plan calls for a specific plan of expenditures. This is typically greater than other community colleges in the state of Michigan. That is primarily due to the fact that LCC has a technology infrastructure unlike any other institution in the state. In addition, most of the community colleges in the state do not replace equipment on the same schedule we choose to. This schedule is meant to provide the best possible hardware &amp; software to our staff &amp; students.</td>
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<tr>
<td></td>
<td>I believe that technology implemented properly and with a reason is a good investment. Making our institution accessible from anywhere in the world is a step in the right direction. Many Lansing community members leave the area, but still have ties back to Lansing, and wish to continue to take classes through the college. Also, in a time when we need every tuition dollar that we can get, we should make it easier for students to have many ways to enroll and take classes that fit their needs.</td>
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<td>I am not sure what our gain was converting to the Oracle Higher Educational Administrative Software Systems. We converted from SCT Banner System to Oracle. It was determined that Oracle was more Web based than Banner. Banner 7.x is now very Web based. I feel we would have had a web solution with staying with Banner, and we would not have the conversion cost of going to Oracle. By staying with Banner, we would have had a network of schools in Michigan and across then Nation. Our network of schools on Oracle is very small, and not in Michigan.</td>
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<td></td>
<td>With the implementation of the Oracle infrastructure and application, the IT division was able to reduce staff positions by 10. The use of discoverer reporting has been instrumental in providing real time data for the institution.</td>
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<td></td>
<td>Bi-weekly tech liaison meeting are an excellent example of engaging faculty. ISCD is also constantly looking to improve processes that will improve service and delivery of a quality product to student and staff.</td>
</tr>
<tr>
<td></td>
<td>Monthly reports are run that gives all service requests information used to manage all areas of ISCD service.</td>
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<tr>
<td></td>
<td>Faculty/Tech Liaison committee meets to discuss tech needs in the classroom. On line admissions and enrollment will reduce the amount of resources needed to get a student started at the college. Students being able to register 24 hours a day, rather than having to stand in a line at a scheduled time will allow for them to fit us into their schedule, rather than making them fit our schedule.</td>
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<td>Executive leadership as in LCC’s President is collaboratively aligned. Executive leadership as in the board of trustees is not aligned. They have no idea what the college needs technologically.</td>
</tr>
<tr>
<td></td>
<td>The actions of the LCC Board of Trustees have negated any values that may have been present in questions 3 - 6. There is a Strategic Plan at the institution level, but without the ability to execute this plan without Board interference, the ISCD/IT organization is shackled.</td>
</tr>
<tr>
<td></td>
<td>There is no longer executive buy-in, nor a goal of making improvements. Staff, Managers, and Executives do not have direction. The Board has single-handedly and arbitrary grasped key decision making authority. I suspect turnover will spike at LCC, and whole heartedly would support ANYONE taking such an action.</td>
</tr>
</tbody>
</table>
The CIO has no authority to participate in anything after the Board actions taken. I Fully Support the Management team at LCC. I will work to replace ALL current board members in whatever way I can.

If you don't like these answers, you should have avoided asking these questions.
Lansing Community College Assessment
Report on Current State of Oracle Applications at LCC
The circumstances at LCC with respect to the Oracle Applications are a mixture of good and bad. Despite all of its “sophistication”, the site has numerous Oracle Applications issues.

The following Oracle modules are having critical issues
  - Oracle Financial Aid
  - Oracle Student System

Examples:
Functionality problems exist in Oracle Student Financial Aid in the form of disbursed funds (twice) to same student or simply none at all, which then must be manually corrected. LCC also sees miscalculations of GPA, which gives students a sense of doubt about the accuracy and integrity of their academic records. Students expressed the dissatisfaction with the Student System portions of Oracle with regard to these functions and the results of other processes. Examples included:
  - Changing curriculum code will automatically change your residence code.
  - Dropping a students off of one program and starting them fresh in new one and results in loss of academic history (academic record).
  - Duplicate student records are a HUGE ISSUE! Thousands were found originally, but have since gone down to 100 duplicates. ISCD can’t keep the duplicate records from being created. A duplicate record makes it impossible to be certain of the accuracy of academic records, financial records and financial aid

Time is definitely not on the staff’s side in many student departments as the Banner system provided more results with less effort. Oracle requires many more steps to perform the same functions and complicates it even more when the staff needs to validate most results, due to confidence being extremely low with data accuracy.
  - Up to 4 hours per day is spent either on the phone or in person helping students with the Oracle online application for the college.
  - Up to 10 hours per week is spent on identifying, troubleshooting and cleaning up duplicate student records.
  - The college transcript now takes up to 20 minutes per transcript request!
  - The staff feels like they can’t meet the needs of the students and be efficient in their work.

Oracle Financial Modules are not having critical issues. These would include GL, AP, AR, GMS, I Procurement, I Expenses, and the Collaboration suite.

The following Oracle modules are having non-critical issues
  - Oracle HR & Payroll

Data Conversion and Availability
Not all of the data from their prior Banner system was converted based on the assumption that what was necessary was converted. But time and again mention was made of the need to access Banner to get information. Mention was made of creating a data warehouse in Oracle but several issues exist with this thought.
  - One, there is not sufficient staff with the expertise to create and maintain this data warehouse.
  - Second, the conversion of data may not be as straightforward as they think.
  - I could not find that sufficient thought has been spent on this review of what needs to be converted and what format does it need to be in.
  - Third, an easy-to-use reporting tool needs to sit in front of the data warehouse. While Discoverer has been mentioned as possibility, many users are either not comfortable using this tool, do not have training to use it, or simply are intimidated by it. Other reporting tools need to be considered.
    - Perhaps an archive with Noetix views would be a better choice for them. This tool is much easier to use in my opinion and allows for less sophisticated users to have access to the data and write their own reports.
Over-Ambitious Implementation of Technology Beyond the Needs (and Capabilities) of LCC

The number of Oracle modules implemented and in the process of implementation at LCC seems to be beyond what is necessary. LCC seems to be on the “bleeding edge” of many of these and is perhaps even an Alpha tester and developer for many. This is causing issues with the users being able to get access to data and also adds to the “bugs” issues that LCC is dealing with, causing great frustration at the end user level. While it would be imprudent to scrap all of these efforts, LCC needs to stop and do a BPR to see what is really necessary for it to do business and be competitive in the higher education market. LCC seems to have more Oracle modules in place than many Fortune 500 companies. One has to question the logic of having all of these modules. A stable platform is what is really needed at LCC, one that serves their BP needs.

LCC seems to have an insatiable appetite to embrace the newest in technology. Again one has to ask whether this is a prudent. What technical staff they do have seems to be more preoccupied with “the latest” and not really taking care of the users’ business and technology needs. They seem to exist more to serve themselves rather than their customers. This is causing alienation of the user community and creating the use of numerous shadow databases. These are not backed up or maintained and that is creating a very dangerous data integrity issue.

The IT department structure creates a false impression of what strength is really present. The Directors reporting to the CIO … are really only functional analysts. They have no Oracle developer skill sets. They were power users in the respective departments and were pulled into IT to use their skills for evaluating, testing new modules. While IT can leverage their knowledge, there should be open lines of communication with the end users and the individual department heads in identifying issues, creating resolutions to problems, and design and implementation of new processes. The reason we were given for there not having developers on staff is that they do not do much development. Currently, they outsource their development needs to EIS. Of course, there probably would be more development if they actually had developers on staff. Again, the interviewees mentioned time and again making development requests and not getting any response. It is hard to get a response when you don’t have the skill set on staff. They really need several developers, at least 2 in the student area and 2 in the financials area. Everything that EIS is doing could be done in-house with a skilled developer/analyst team.

The DBAs also seem to rely heavily on Efficient Computing to monitor their systems. There is nothing they (Efficient Computing) is doing that skilled staff should not be doing as a part of their regular job functions. I cannot see any valid reason that these tasks could not be done in-house.

Identifying new technology in lieu of the actual needs of the functional users is not solving the departmental problems. The ISCD group spends too much time evaluating new technology, instead of understanding the needs of each department.

Resource allocation is affecting different departments in many ways.

- First, the Financial Aid department has suffered through this implementation without a director and technical person.
- According to the very seasoned Consultant running this department temporarily, Evan M. is the most qualified expert on Oracle Financial Aid in the country (he has been a Financial Aid director before), considering there are only 2 or 3 implementations, but he is being allocated as a Director of Student Systems in ISCD. The technical person in that office was let go in a critical time of implementation which added to the pain in their dept.
- Secondly, Kellee Goff, a programmer/analyst working for Evan M. in ISCD, is clearly overworked, stressed beyond her limits and is performing three jobs due to dept. losses. She doesn’t have a backup for any of her work.
- Financial Aid has lost Penny as assistant director 2 yrs ago. They lost their very competent technical liaison Chad Lycos in Jan 05. They lost the Director of Financial Aid in July 05. During the HR/FIN implementation, ISCD laid off several folks, including the Chad Lycos from Financial Aid.

Lack of Communication, Project Management Practices, and Unresponsiveness to Departmental Needs Pose Serious Impediments to Success

The Liaison groups, which are a forum where issues and priorities of issues are decided, need to involve the end user department heads. The individual department heads should be taken into confidence related to design and implementation decisions. They should also be supported on issues. Right now department heads feel alienated and have all but given up on getting any response from the IT department for their needs.
- There are issues with workflow, alerts and notifications that have not been addressed.
- Data requests have been ignored.
- New reporting should be provided to the departments as requested
- Communication of priorities is not disseminated publicly or widely back to the staff that makes requests for service.
- Request are placed in a queue for action, however many employees have expressed that they have no idea what status some of their requests are in. They maintain that two new liaison groups have been developed to try to prioritize these requests. However, it seems clear that these requests are only considered if they are in the best interests of the software package, not the users needs!

**Change Management is very basic and not up to professional standards.**
- There is no evidence of formal Business Process documentation.
- There is very limited documentation (Requirements, Technical documentation) on custom reports/interfaces available.
- There are no documentation standards for developers
- Testing is done on Development which is not cloned with Production data regularly.
- The developed modules are migrated directly from Development to Production (No migration tool)
- Also migration procedures are not streamlined as the developer himself sets up the concurrent programs in Production and copies executables into Production. (No Gate Keeper) This is a very dangerous practice.
- There is insufficient testing. The power users are the only testers. The end users need to be involved during testing. In some cases they have been involved but in these cases the test scripts have been provided by IT and no deviations from the test scripts allowed during testing.

**Training**
The users and the individual departments should be provided adequate training before new implementations. The workarounds for business processes in case of gaps in Oracle Applications should be communicated clearly.

Training is clearly not effective for students, staff and faculty. The attempts at training after the fact did not help with the users’ confidence and the level of training wasn’t sufficient afterwards. The training provided included PowerPoint slides, tutor documents, and email exchange from user to user. Training is difficult to follow, it has disparity with actual training, and users who aren’t self directed learners suffer. Requests for training have been stalled by lack of trainers at the college. Note: Formal training on Oracle Financial Aid just occurred two weeks ago, they have been live with Student module since April 2005.

**Reporting** is a problem across the student system as no one seems to have what they need. Although, they have access to some reports delivered by ISCD, they don’t have access to query the data or get additional data for their review.
Example of areas that end users want addressed:

Purchasing identified the following areas to improve upon. LCC needs developers to do these:

1. Ability to schedule the print out of requisitions (i.e. 8:00 am and Noon).
2. Option to print out purchase orders and change orders as a group once they are approved with one command rather than individually.
3. “Note to Buyer” to print out on requisition.
4. Requisition attachments to print out automatically with requisition.
5. Ability to enter order discounts for the entire purchase order. Presently when a supplier gives a discount, staff have to take the discount off the line item amounts before they key the price in. It would be more efficient if they could enter this as in Banner and the purchase order subtract the discount overall.
6. Ability to change description and price at the line item that have had activity (receiver processed and/or payment). Presently staff have to create an additional line item to do this.
7. When staff add a line item to a purchase order it would be preferable if the PTAE0 would automatically populate. This would reduce the potential for errors, and it would be much more efficient.
8. Ability to do a global replace for all line items when changing from Services to Goods. Often there are multiple line items and the data entry person has left the default setting of “goods” and purchasing staff need to change multiple items so that the purchase order reflects the correct category.
9. Ability to do a global replace when changing form a 3-Way match to a 2-Way match.
10. Ability for purchase order to automatically select the RESERVE indicator when approving. There is no instance when staff would not want to reserve funds on approval.

These are the conclusions of the Oracle assessment team:

The technical issues found were in 2 categories; (1) those related to setups decisions (some of which Lansing intends to correct in its’ 11.5.10 implementation) and (2) those related to management decisions that reflect organizational problems. The core Oracle financials are stable and well integrated with LCC’s business processes. The implementation of Oracle HR is more problematic, but the technical issues are fairly easy to resolve. The Oracle student system is not yet fully mature in its’ development, especially in the areas of Financial Aid and Recruitment. Notifications seem to be a particular point of issue. Training is missing for many staff members.

There is concern with the ISCD business practices that impede effective adoption and use of technology. These practices demonstrate deficiencies in accountability, communication, planning and tracking, and service.

Accountability
Issues:

- Functional areas have no control, little input in ISCD decision-making and prioritization.

Recommendations:

- Create a governance board whose chair reports to the board of directors and whose goal is to align ISCD with college’s mission, business needs and vision.

Communications
Issues:

- In order to improve statistics, help desk service requests are closed without resolution; users do not feel that their more difficult issues get attention on a timely basis. There is no clear path to make requests.
- The ‘Liaison Groups’ seems to offer one-way communication. Functional area members may voice concerns, but ISCD makes all the decisions. Although each functional area has a long wish list of modifications, it is unclear how ISCD is addressing them.

Recommendations:

- Develop a clear path for making service requests and provide an easy mechanism for users to track progress on their requests.
- Use a project tracking application to communicate status of all projects.
- Have the governance group oversee and prioritize all ISCD projects.
Planning and Tracking

Issues:
- Application development project tracking is haphazard.
- There is no formal change management methodology or automated tools
- There is no formal documentation for configuration setup, customizations
- Implementations are being rushed. Problems found during testing appear to be pushed aside to meet unrealistic ‘go live’ dates.

Recommendations:
- Adopt a formal change management methodology and an automated tool to control (at minimum) production check-in process.
- Adopt and enforce standards for documentation. Oracle has a methodology and templates which may be used.
- Charter governance group to oversee and prioritize all implementations.

Service

Issues:
- There is limited technical (developer) expertise in-house. Application development outsourced to EIS, DBA outsourced to Efficient Technology.
- No little training in Oracle development tools (forms, reports, PL/SQL, HTML DB, etc.) Staff is not well-equipped to manage the complexities of Oracle Applications. Simple user requests are ignored for months because staff lacks technical expertise.
- Despite embracing the concept of ‘self-service’, several user processes remain under ISCD control. Users must request for ISCD personnel to run these processes.

Recommendations:
- Restructure ISCD organization to replace several ‘functional’ positions with two project leads and at least four application developers.
- Hire trained developers or train current staff in skills in Oracle*Forms, Oracle*Reports, PL/SQL, HTML DB, and XML Publisher.
- Register custom processes to Oracle Applications so that users may run them without ISCD involvement.
- Configure Oracle Portal and Oracle Single Sign on so that users do not have to log on to the application after logging on to the portal.
- Adjust system timeout from default 20 minutes to 60 minutes to allow users to stay live after periodic interruptions.
Michigan Colleges and Universities with Banner Systems
as of February 2006

1. Albion College
2. Andrews College
3. Hope College
4. Kettering College
5. Lake Michigan College
6. Lawrence Technical University
7. Northwest Michigan College
8. Washtenaw Community College
9. Kalamazoo Valley Community College
10. Wayne State U
11. Eastern Michigan University
12. Wayne County Community College District
13. Michigan Tech U
14. Western Michigan University
15. University of Michigan-Dearborn
16. University of Michigan – Flint
17. Ferris State University
18. Grand Valley State University
19. Lake Superior State University
20. Northern Michigan University
SunGard Collegis

- Focuses exclusively on higher education
- Product/Vendor independent
- The largest provider of comprehensive higher education technology services
- Not a seller of software or hardware; Collegis provides services only
- Services include:
  - Strategic planning, assessments, management, administrative systems, academic, instructional, network, telecommunications, security, helpdesk, desktop and more
- Industry-leading technology expertise
  - Leveraged expertise of 900+ Collegis employees nationwide
  - 71 active Higher Education clients
  - 200+ dedicated administrative application specialists
  - Support all major administrative systems including Datatel, Jenzabar, PeopleSoft, SCT Banner and Oracle.
    - Product neutral – support client’s current systems
    - Product neutral – in 2005, new clients included ones operating Datatel, PeopleSoft, Banner and a custom “legacy” system