

## North Orange County Community College District District Services Administrative Review

District Service: Information Services

District Services Administrative Review Author: Deborah Ludford, District Director, Information Services

### 1. Description:

Information Services is completing the second year of the “*District Information Services Technology Plan 2016-2018*”. The latest update is below (double click to open) and was updated in December 2017:



Information Services  
Tech Plan 2016-2018 :

The objectives for the three-year period of the plan include:

- ✓ Provide tools/systems to assist in monitoring and tracking improvements in completion rates for degrees, certificates, diplomas, transfers, transfer-readiness requirements, and courses.
- ✓ Provide, maintain and improve systems that support student learning.
- ✓ Provide tools/systems to assist in monitoring and tracking improvements in the reduction of the achievement gap among race/ethnicity groups.
- ✓ Provide tools/systems to assist with the improvement of students’ success rates.
- ✓ Provide more comprehensive decision-making tools and systems.
- ✓ Support best practices in strategic and comprehensive planning with appropriate systems and expertise.
- ✓ Lead and/or participate in District-wide collaborative projects to improve services and/or efficiencies.
- ✓ Provide better tools/systems to help staff across the District to be more effective and efficient.
- ✓ Monitor potential new technologies/systems for applicability at NOCCCD.
- ✓ Provide system and technology training.

## 2. Assessment of Strategies for Improvement for 2016 and 2017

Status of items from 2016 which were not previously completed:

Strategy	Resources Involved	Status
Upgrade the mobile application, myGateway, Banner systems over the next two years to better meet needs of students and staff	I.S. Department and consulting services as needed	myGateway upgrade completed; study underway to replace the outdated mobile applications; upgrade to Banner planned for 2018/2019.
With the cooperation of the three campuses, complete the installation of Office 365 at all sites and provide collaborative tools such as District-wide calendaring, document sharing and instant messaging in addition to traditional email	I.S. Department in cooperation with campus ACT departments	Project completed. Note Fullerton College is using Microsoft Exchange with Office 365 applications.
Complete project for Disaster Recover/Business Continuity	Nick Wilkening; Peter Teipe	Phase I offsite backup of systems completed; Phase II hot site upgrade to be completed in 2018/19.
Complete the Network Refresh network assessment and network design; begin the implementation process based on the findings from the assessment and design	Nick Wilkening; Boaz Carmi, WTC Consulting, Shandam Consulting and campus ACT Departments	Network Refresh Phase I Assessment completed by WTC Consulting; Network Refresh Phase II Design due to be completed in Spring 2018 by Shandam Consulting; Phase III Procurement and Phase IV Implementation to follow.
Continue to work on project list items determined by I.S. Steering	I.S. Department staff	Ongoing. Status is on the website at: <a href="http://www.nocccd.edu/is-planningprojects">http://www.nocccd.edu/is-planningprojects</a>
Consider re-instituting the training position in Information Services to expand and improve the	Deborah Ludford; Fred Rocha and Nick Wilkening	Completed

training services offered by the department		
Evaluate job descriptions to better meet District-wide needs	District Technology Roundtable	Network positions to be updated during the Network Refresh project; discussion continues on remaining positions based on 2016 Administrative Review of Institutional Capacity. CBT hired to review all District Management positions.
Execute the action items identified in the <i>“District Information Services Technology Plan 2016-18”</i>	I.S. Department Staff	Status of items provided in Section 1 imbedded document.

In 2017, a review of Organizational Capacity was completed with extensive research at the campuses and based on Gartner Research. Short term and Long term changes were identified. Below are those recommendations and the current status:

**Short Term Changes to the Organizational Structure to achieve ITScore 2/Process Optimizing**

Recommended Change	Justification	Status
<p>Move to a process/function matrix organizational structure with emphasis on functional areas such as HR, Finance and Student</p>	<ul style="list-style-type: none"> <li>✓ Moves the organization from IT-Centric outcomes to Business outcomes</li> <li>✓ Recommended structure from Gartner for a Process organization</li> <li>✓ More effective use of staff as they are assigned to teams based on their area of expertise</li> <li>✓ Provide more focused customer service because teams are focused on project by functional area</li> <li>✓ Provide timely problem resolution because staff focus on business outcomes</li> </ul>	<p>Not yet implemented</p>
<p>Split current IT Security Analyst/Systems Administrator into two distinct positions:</p> <ul style="list-style-type: none"> <li>✓ IT Security Analyst (report to Director/CEO)</li> <li>✓ Systems Administrator</li> </ul>	<ul style="list-style-type: none"> <li>✓ Allows systems administrators to keep up with the increased upgrade workload and major security patches required in today's environment</li> <li>✓ Raises awareness of security in the organization</li> <li>✓ Provides the ability for the Security Analyst to focus strictly on security policy, training, procedures and guidelines</li> </ul>	<p>Completed with revision. Hired a second IT Security Analyst/Systems Administrator for a total of 1 FTE for security and 1 FTE for Systems Administration. Two positions provide for backup and cross-training.</p>
<p>Convert User Support Analyst (Training/Banner Security) to Communication/Training Coordinator and move security component to IT Security Analyst</p>	<ul style="list-style-type: none"> <li>✓ Consolidates the security function</li> <li>✓ Raises awareness of security in the organization</li> <li>✓ Facilitates the communication with customers in the value of IT services</li> </ul>	<p>Completed. Hired Systems Applications Training Coordinator.</p>

	<ul style="list-style-type: none"> <li>✓ Provides better and more frequent communication regarding technology and security issues</li> <li>✓ Provides ability to develop various types of training including on-demand, in class, etc.</li> </ul>	
<p>Add three Business Process Analysts to support functional areas (HR, Finance, Student) with optimization of their business processes and to leverage system capabilities not currently used</p>	<ul style="list-style-type: none"> <li>✓ Invests in business processes that envelope the systems</li> <li>✓ Focus on relationship management and continuous improvement</li> </ul>	<p>Hired Consultant to test the concept in Human Resources and Student Services (OnBoarding).</p>
<p>Cross train staff to address key retirements including I.T. Technician II (Help Desk), IT Specialist Network (Network), IT Project Leader (Application Services) and a Systems Analyst-Applications (Oracle Database Administrator/Banner Upgrade Specialist)</p>	<ul style="list-style-type: none"> <li>✓ Prepares the organization for the transition due to the loss of key personnel</li> <li>✓ Increases knowledge across the organization</li> <li>✓ Encourages innovation and career growth</li> </ul>	<p>Completed. Hired replacement IT Technician II. In the process of hiring IT Project Leader, Systems Analyst Applications and Systems Analyst Technology to cross-train prior to retirements. SERP will cause retirements earlier than originally expected.</p>
<p>Revise job titles, roles and responsibilities to align with the new structure with clear pathways for career growth. New job titles will include:</p> <ul style="list-style-type: none"> <li>✓ Network Administrator, Sr. Network Administrator</li> <li>✓ Systems Analyst, Sr. Systems Analyst</li> <li>✓ Systems Administrator, Sr. Systems Administrator</li> <li>✓ Sr. Data Analyst</li> <li>✓ Programmer I, II, III, Sr. Programmer</li> <li>✓ IT Support Specialist I, II, III</li> </ul>	<ul style="list-style-type: none"> <li>✓ Clear growth path for staff across the District</li> <li>✓ Clarify roles and responsibilities</li> <li>✓ Uses industry specific titles to attract more qualified candidates in hiring of professional staff</li> </ul>	<p>Not started.</p>

**Long Term Changes to the Organizational Structure to achieve ITScore3/Service Optimizing**

Once the ITScore 2/Process optimization recommended changes are completed and the organization is efficient and able to achieve predictable and repeatable results (approximately 1-2 years) the following changes need to be implemented in order to achieve ITScore 3/Service optimization:

Recommended Change	Justification	Status
Reorganize to a process/function matrix with multi-disciplinary process teams; competency centers staffed as internal consultants	<ul style="list-style-type: none"> <li>✓ Recommended structure from Gartner for a Service organization to operate as a competitive service provider</li> <li>✓ Encourages the introduction of technologies to transform the business and add real value</li> <li>✓ More effective use of staff to focus on service needs</li> <li>✓ Provide more focused customer service</li> <li>✓ Provide timely problem resolution with teams composed on multi-disciplinary experts</li> <li>✓ Encourages innovation and thinking outside normal functional areas</li> </ul>	Not started.
Upgrade job titles, roles and responsibilities to align with those needed for a service optimized organization. Job titles include: <ul style="list-style-type: none"> <li>✓ Enterprise Network Engineer I, II</li> <li>✓ Enterprise Systems Engineer I, II</li> <li>✓ Enterprise Systems Programmer I, II, III</li> <li>✓ Systems Integration Specialist</li> <li>✓ Information Security Engineer</li> <li>✓ Chief Technology Officer</li> <li>✓ Director, Systems Applications</li> <li>✓ Director, IT Infrastructure and Operations</li> </ul>	<ul style="list-style-type: none"> <li>✓ Allows the introduction of a more holistic approach to systems development and maintenance</li> <li>✓ Aligns with other community college job titles</li> <li>✓ Attracts more qualified talent</li> <li>✓ Fosters solution, relationship and business expertise</li> </ul>	Not started.

3. **Data:**

Below is a list of documents that assisted in formulating the strategy for next year:

- ✓ *The 2015 NOCCCD Technology Survey* (survey of Faculty, Staff, Students on service satisfaction).

Note the next survey will be conducted in Spring 2018 and this report will be revised at that time if results require revision.

- ✓ *2015 District-wide Satisfaction Survey for Information Services*— double click on Icon below to view document:

Survey completed in Spring 2017; results not yet available.

- ✓ *Information Services 5 Year Committed Costs* (analysis of contract/committed costs of current systems and infrastructure to support those systems) – use the link below to view document:



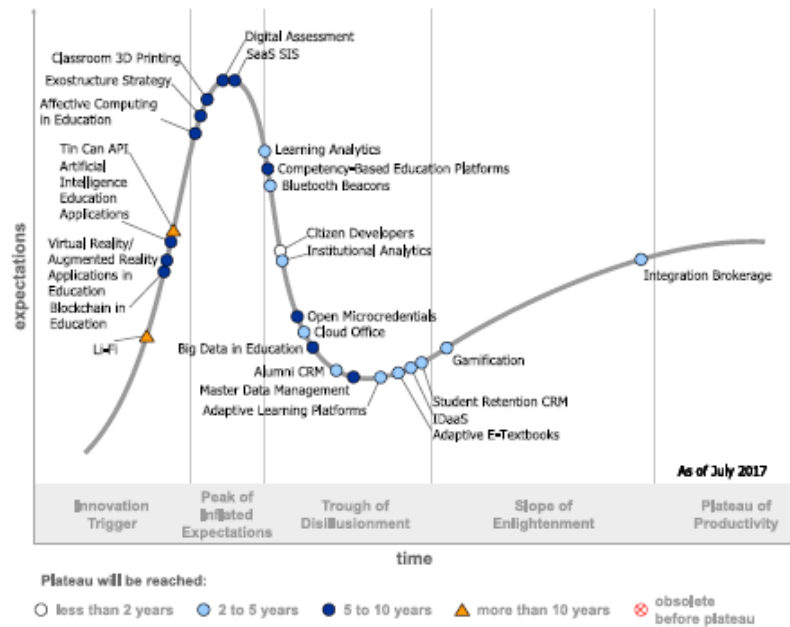
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breakdown 2017-20

- ✓ *Project Lists* – click on website link below to view Development, Ongoing and Completed projects:

<https://www.nocccd.edu/is-planningprojects>

- ✓ *Gartner Research Hype Cycle for Education 2017*

Figure 1. Hype Cycle for Education, 2017



Source: Gartner (July 2017)

#### 4. Data Analysis:

The *NOCCCD District Information Services Technology Plan 2016-2018* identifies those things that will be done in support of the District Strategic Directions and Chancellor's Goals. The plan outlines the Information Services Goals and Activities that should be undertaken to meet the District Strategic Directions and Chancellor's Goals. The Information Services department received a commendation during the fall 2017 Accreditation site visit for technology infrastructure and planning including hiring and succession planning as a result of the planning efforts of the department in conjunction with technical staff across the District. The plan status was updated in December 2017. See the link in Section 1 above to view the revision.

In addition, the *Technology Quality Survey* which was conducted in 2015 District-wide amongst staff and students clearly indicate that the major source of frustration is the availability of a reliable network, both wired and wireless, and the need to upgrade outdated systems. Many projects were undertaken because of this survey both in District Information Services and at the campuses. Those projects such as the Network Refresh project continue to be important. The next survey will be done in February 2018. If significant areas are identified in that survey that are not addressed in this administrative review it will be updated at that time.

The *2017 District wide Satisfaction Survey* was conducted but the results are not yet available. If significant areas are identified in that survey that are not addressed in this administrative review it will be updated at that time.

Further, an analysis of the financial resources in the 5-year Information Services Committed Costs 2016-22 document indicates that with the current cash allocation, Information Services fell short in 2016-1 by \$111,106 in meeting ongoing cost obligations and will fall short of meeting its obligated costs by \$478,649 for the systems currently in use during the 2017-18 year. To meet the shortfall in 2016-2017, carryover were depleted to meet the obligations.

Finally, the I.S. Development Project list identifies those projects requested by members of the District or identified by the Information Services staff based on the Gartner Hype Cycle for Education, 2017 that are needed or worth exploring to better serve the institution. This list indicates a large backlog of unmet needs across the District.



## 5. Strategies for Improvement:

### Background

The District has allocated resources to address Institutional Capacity issues over the short and long term. Information Services examined its functions and structure and identified ways prepare for the future demands of technology across the District.

Information Services is in the second year of three-year technology plan which is closely aligned with the District Strategic Directions and the Chancellor's Goals. The objectives identified for the three-year plan include:

- ✓ Provide tools/systems to assist in monitoring and tracking improvements in completion rates for degrees, certificates, diplomas, transfers, transfer-readiness requirements, and courses.
- ✓ Provide, maintain and improve systems that support student learning.
- ✓ Provide tools/systems to assist in monitoring and tracking improvements in the reduction of the achievement gap among race/ethnicity groups.
- ✓ Provide tools/systems to assist with the improvement of students' success rates.
- ✓ Provide more comprehensive decision-making tools and systems.
- ✓ Support best practices in strategic and comprehensive planning with appropriate systems and expertise.
- ✓ Lead and/or participate in District-wide collaborative projects to improve services and/or efficiencies.
- ✓ Provide better tools/systems to help staff across the District to be more effective and efficient.
- ✓ Monitor potential new technologies/systems for applicability at NOCCCD.
- ✓ Provide system and technology training.

In 2016-17, District Information Services was asked by the Chancellor to examine the organizational structure and processes used in the department and propose both short term and long term changes that would improve the organizational capacity of the department as well as address key retirements expected in the next 2-3 years. A process to do this was proposed and executed to get wide input on the future organizational capacity and structure of the Information Services department.

On the following pages are the proposed organizational structure for the short term (ITScore2/Process Optimized) and long term (ITScore3/Service Optimized):

# District Information Services ITScore2/Process Optimized

Strategy/Communications/Security/Business Value

## Project Management/Coordination/Process

## Technical Operations/Implementation

District Director,  
Information  
Services

IT Security Analyst

Communications  
and Training  
Coordinator

Administrative  
Assistant III

District Manager,  
Applications Support

District Manager, IT  
Technical Support

Business Process  
Analysts

IT Project Leaders

Senior  
Systems  
Analyst/  
Systems  
Analyst

Senior  
Systems  
Administrator  
/Systems  
Administrator

Senior  
Network  
Administrator  
/Network  
Administrator

Senior Data  
Analyst

Senior  
Programmer/  
Programmer  
III, II, I

IT Support  
Specialist III,  
II, I

*Technical teams formed based on functional project needs/scope; system maintenance assigned to individual team members*

# District Information Services ITScore3/Service Optimized

Strategy/Communications/Security/Business Value

Chief Technology Officer

Information Security Engineer

Communications and Training Coordinator

Administrative Assistant III

## Project Management/Coordination/Process

Director, Systems Applications

Director, IT Infrastructure and Operations

Business Process Analysts

IT Project Leaders

## Technical Operations/Implementation

Enterprise Systems Programmer I, II, III

Enterprise Systems Engineer I, II

Enterprise Network Engineer I, II

Senior Integration Specialist

Senior Programmer /Programmer III, II, I

IT Support Specialist III, II, I

*Multi-disciplinary process teams formed; competency centers staffed as internal consultants; system maintenance assigned to individual team members*

6. Resource Requests:

Needs identified in previous years that are ongoing needs:

Need	Justification	Cost
Network Refresh Project	<ul style="list-style-type: none"> <li>✓ Identified in <i>NOCCCD District Information Services Technology Plan 2016-2018</i></li> <li>✓ Requested in previous Administrative Review</li> </ul>	\$15-\$30 million one-time; ongoing equipment maintenance costs to be determined in assessment phase

Ongoing budget needs identified in the implementation of the *NOCCCD District Information Services Technology Plan 2016-2018* and the Information Services 5 Year Cost Projection include:

Need	Justification	Cost
Ongoing Maintenance of newly added systems in 2015-16	<ul style="list-style-type: none"> <li>✓ Identified in <i>NOCCCD District Information Services Technology Plan 2016-2018</i></li> <li>✓ Requested in previous Administrative Review</li> </ul>	\$111,106 for 2016-17; \$478,649 for 2017-18 and beyond (see 5-year projection in Section 3)  NOTE: This was allocated by Council on Budget and Facilities with one-time monies
Consulting for Banner 9 implementation	<ul style="list-style-type: none"> <li>✓ Ensure that January 2019 deadline can be met</li> <li>✓ Training for newer staff</li> </ul>	\$35,000 one-time
Staff Training	<ul style="list-style-type: none"> <li>✓ Banner will go through a major upgrade on a completely new technology stack</li> <li>✓ Training for new technologies and new systems is essential for success of department staff</li> </ul>	\$20,000 one time
Endpoint Protection System	<ul style="list-style-type: none"> <li>✓ Increased frequency of cyber-attacks across the education vertical call for the use of better endpoint protection systems</li> <li>✓ Increased malware, ransomware and phishing attacks across the District</li> </ul>	\$100,000 for a three year District-wide license

In addition, the following Short Term and Long Term Institutional Capacity needs have not been met:

**Institutional Capacity Short Term Needs**

Need	Justification	Cost
Identity Management Consulting/Product (to coincide with the Network Refresh project)	<ul style="list-style-type: none"> <li>✓ Single Sign On requires well thought out planning and good technology choices</li> <li>✓ Required for new version of Banner</li> <li>✓ Compatible with Network Refresh direction</li> <li>✓ Current environment complex with four separate systems in place</li> <li>✓ Current District/Campus staff not experts</li> <li>✓ Current AD Sync process time intensive for IS to maintain- it was intended to be a short term solution</li> <li>✓ Campuses don't feel the maintenance effects because they kept same structure-hesitant to change</li> <li>✓ Campus desire to remain independent</li> <li>✓ Looking for a product that will do all SSO provisioning which will result in significant staff time savings (1 FTE for I.S. and .25 FTE for each campus)</li> </ul>	Directory Management: \$30,000 first year; \$15,000 ongoing  AD Consolidation: \$120,000 one time for consulting or \$150,000 for a product ongoing
Change Management Tracking/Knowledge Base System	<ul style="list-style-type: none"> <li>✓ Try system in I.S. first and allow campuses to add in later</li> <li>✓ Centralized knowledge base of all technology problems across the District</li> </ul>	\$1360/month for I.S. only

<p>Security Essentials Online Training Development</p>	<ul style="list-style-type: none"> <li>✓ Technology Coordinating Council has formed a subcommittee just to work on Security</li> <li>✓ Technology Coordinating Council has developed two goals; one is security training and the other is Security Policy development</li> <li>✓ Current 50% Security Officer is not sufficient</li> <li>✓ Biggest vulnerability is our data being compromised via human error</li> <li>✓ Training that is user friendly and easy to accomplish is most desirable</li> <li>✓ Online training and website resources offers the best alternative to reach the most people with least institutional impact</li> </ul>	<p>\$24,500 one time</p>
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**Institutional Capacity Long Term Needs**

The following are the necessary resources required to move to a process/function matrix organizational structure with emphasis on functional areas such as HR, Finance and Student:

Need	Justification	Cost
<p>Job Description Updates including:</p> <ul style="list-style-type: none"> <li>✓ IT Technician II converted to IT Support Specialist II</li> <li>✓ IT Specialist, Network converted to Network Administrator</li> <li>✓ Systems Analyst, Applications converted to Senior Systems Analyst</li> </ul>	<ul style="list-style-type: none"> <li>✓ Moves organization towards ITScore2/process optimization</li> <li>✓ Increases knowledge across the organization</li> <li>✓ Encourages innovation and career growth</li> </ul>	<p>Approximately \$40,000/year ongoing based on comparative positions</p>
<p>Positions required to move organization to ITScore2/process optimized include:</p> <ul style="list-style-type: none"> <li>✓ Add three Business Process Analysts to support functional areas (HR, Finance, Student)</li> </ul>	<ul style="list-style-type: none"> <li>✓ Moves the organization from IT-Centric outcomes to Business outcomes</li> <li>✓ Recommended structure from Gartner for a Process organization</li> <li>✓ More effective use of staff as they are assigned to teams based on their area of expertise</li> <li>✓ Provide more focused customer service because teams are focused on project by functional area</li> <li>✓ Provide timely problem resolution because staff focus on business</li> <li>✓ Invests in business processes that envelope the systems</li> <li>✓ Focus on relationship management and continuous improvement Consolidates the security function</li> </ul>	<p>Three New Business Process Analysts \$86,720/year ongoing to be place in Information Services (1) and outside departments (2-TBD) and other departments can hire as needed</p>

<p>Achieve ITScore3/service optimized organization by reorganization of the department to a process/function matrix with multi-disciplinary process teams; with competency centers staffed as internal consultants. This includes an upgrade of job titles, roles and responsibilities to align with those needed for a service optimized organization. Job titles include:</p> <ul style="list-style-type: none"> <li>✓ Enterprise Network Engineer I, II</li> <li>✓ Enterprise Systems Engineer I, II</li> <li>✓ Enterprise Systems Programmer I, II, III</li> <li>✓ Systems Integration Specialist</li> <li>✓ Information Security Engineer</li> <li>✓ Chief Technology Officer</li> <li>✓ Director, Systems Applications</li> <li>✓ Director, IT Infrastructure and Operations</li> </ul>	<ul style="list-style-type: none"> <li>✓ Recommended structure from Gartner for a Service organization to operate as a competitive service provider</li> <li>✓ Encourages the introduction of technologies to transform the business and add real value</li> <li>✓ More effective use of staff to focus on service needs</li> <li>✓ Provide more focused customer service</li> <li>✓ Provide timely problem resolution with teams composed on multi-disciplinary experts</li> <li>✓ Encourages innovation and thinking outside normal functional areas</li> </ul>	<p>TBD based upgrade of job title, roles and responsibilities with comparative positions having similar duties.</p> <p>Note: This is done once the ITScore2/process optimized organization is in place. Per Gartner research it is important to achieve ITScore2/process optimized first before moving to the ITScore3/service optimized structure.</p>
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