

## Appendix A

### Summary of Observations and Problems

*“Employers need to be telling us what they want” –Community College President*

*“We tell them the problems and then nothing happens” – Business President*

In a 2014 survey, a near-unanimous 96% of chief academic officers said they were doing a good job. At the same time, only 11% of business leaders strongly agreed that graduates have the necessary skills and competencies to succeed in the workplace (*Chronicle of Higher Education*). This is high level evidence of a system that is missing normal “market” forces and feedbacks. In our planning process we compiled data on a similar problem in the community college and employer ecosystems. The following observations from our planning process have become our working assumptions and include specific challenges for our project to overcome.

#### Employer Engagement

- Some community colleges do a good job with soliciting (large) employer needs and adapting offerings. Many do not and just have annual or semiannual employer advisory meetings to meet minimum accreditation requirements.
- Some (generally large) employers think in terms of competencies in a sophisticated way, other employers do not and would have trouble quickly articulating their needs from scratch, never mind approaching the sophistication of a Job Task Analysis or DACUM Chart.
- Large and prominent employers get invited and are willing to send staff to participate in advisory meetings with community colleges while other smaller or less conspicuous employers do not have any interactions.
- Midsize and small employers are generally not represented in community college ecosystems even though they may make up a large proportion of jobs. Community colleges do not have the bandwidth to interact with other than large employers.
- Local collected demand inputs are not generally shared with or propagated to other systems or regions.
- Many employers are generally willing to give participation a try but will drop out if they perceive no corresponding value.
- The typical college-employer trade for participation is free food from the college (lunch or dinner meeting) in exchange for employer attendance and feedback.
- With current manual methods for interacting with employers, smaller colleges and larger systems with many small employers are unable to participate and collaborate with colleges toward demand driven ideals.

- Even in well-structured employer advisory systems, different employer needs and demand signals are captured in unconnected siloes in unstructured ways and at sporadic times.

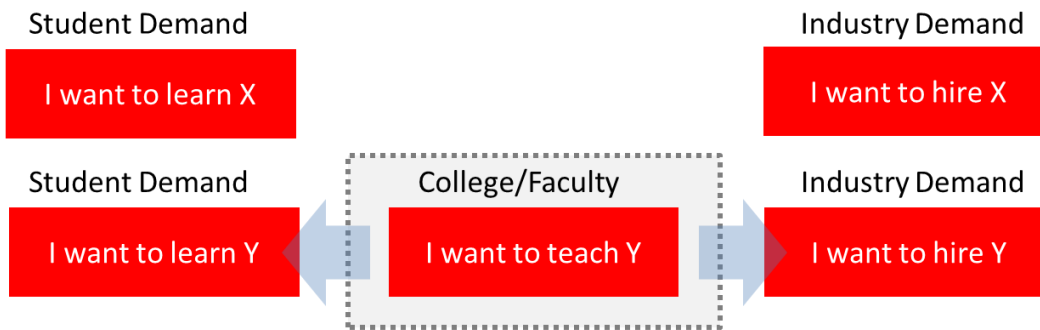
## Skills Gaps

- Employers know how to ask for things in job postings. Employers understand when a new employee has skill deficiencies or needs better or additional training in some area.
- Some community colleges have good competency mappings for their courses in some departments.
- Community colleges are able to determine major demands and holes in training from large employers and many larger community college systems are able to customize offerings to meet major demand with multi course and multi semester certificates or corporate training programs.
- Community colleges are generally not seeing or adapting to smaller demands and holes that could be addressed in a single course, single course module or single day offerings.
- Some colleges can respond in a timely manner to employer needs. Others may require years to significantly change curriculum or program offering or may be institutionally blocked by faculty.
- Some colleges would appreciate being able to be better measured and evaluated by employers (and students). Others colleges will not be as receptive, but those are the ones who probably need the feedback the most.

## Employer and Industry Association Demand

- Demand is only making its way into community college ecosystems through large employers and large events and not in a public way.
- Colleges fully accredit many offerings that have little or no value to employers. Employers may highly value some offerings which are not being provided. College problems may range from faculty bandwidth to faculty interests while employers may have no efficient way to communicate and quantify demand.
- Employers are often finding that new hires are lacking specific basic skills. Some employers have noted that specific credentialing programs are missing that would immediately produce students hired into unfilled jobs. Other employers and educators have noted that existing credentials may have minimal industry or learner demand.
- Colleges often have active programs for serving employer-specific training and demands, but provisioning varies wildly across departments.
- At present, market dynamics for rapid innovation and demand fulfillment are missing in large segments of the education industry. There is no price system or other technology that mediates and manages the interactions between granular employer demands, education supplies at the demanded competency unit level, and learner enrollment decisions.

## Gatekeepers Today



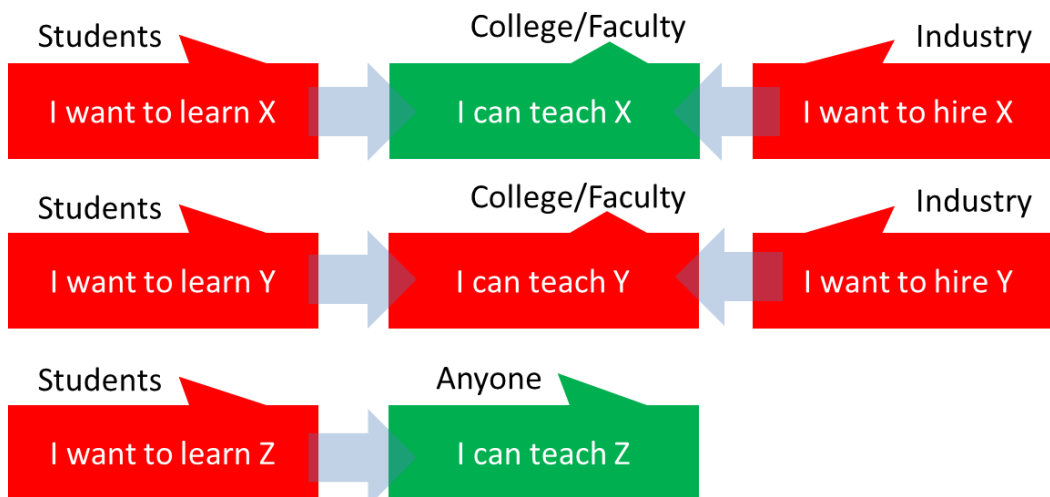
Mismatches and holes arise in the current system flow:  
“I want to teach Y” → “I want to learn Y” → “I want to hire X”

## Solution Concepts

- Aggregating large numbers of small inputs from local employers or industry associations can quickly reveal common demands and missing supply down to the competency level.
- College bandwidth problems are overcome when community colleges can interact with data results rather than multitudes of employers. Demand data can make in-person meetings more focused and productive.
- Industry data can provide value ratings for students to consider alongside college seat time credits. A shadow system of employer validation data would be of great value to learners and college administrators.
- Industry demand data for credentials (courses, certificates, degrees, etc), including return on investment estimates are easily incorporated into career pathways and systems that use labor market data and job posting information.
- Industry demand data can be automatically collected from industry association members who are outside a local ecosystem.
- Standardizing industry demand around competencies facilitates moves to competency-based education and enables supply to be mapped to the commonly demanded competency units it contains.
- Cloud technology offers a way to get employers providing valuable inputs in fast, easy and convenient ways, starting on the order of a minute of time per month. Unlike advisory groups, structured cloud inputs can be captured at many different points within single company, can be anonymous and can be easily aggregated with other local companies with open results access for all participants.

- Employer inputs in public and transparent ways provide instant leverage and accountability for valued changes. Demands that are publicly and objectively demonstrated and quantified are not easily ignored or blocked, even if certain self-interested faculty or administrators might wish otherwise.
- Transitioning from highly variable faculty driven offerings to high quality, standardized and demand driven offerings is something that all colleges want to do more of to improve student outcomes.

### Market Suppliers Tomorrow



“I want to hire X” → “I can teach X” → “I want to learn X”

## Use Case Summary

The Skills Market Network is a consortium designed to identify skill gaps at a granular level and rapidly plug them with standardized industry-valued credentials. The Skills Market Network is also expected to capture and organize demand data on existing credentials that can define where they might (or might not) fall in the spectrum of industry-recognized, industry-recommended, industry required and industry-rewarded. The Skills Market Network is designed to simultaneously serve the needs of employers, colleges, students and their communities and to continue to do so in a rapidly restructuring economy.

Employers can get unfilled training demands met rapidly within the network. If the local community college is unable or unwilling to meet a need appropriately, another community college might be able to do so. If no community college in the network is able to or willing to fill a demand, a third-party provider will be able to do so. Employers can easily give direct guidance to learners and colleges by using drag-and-drop interfaces to design ideal credentials based on competencies, which may be compared to existing programs and which may save significant seat time.

Educators can get unambiguous guidance on how to meet employer needs and thereby improve student outcomes. Educators learn how they can make training offerings more valuable to employers and students

while also making them faster, better and cheaper. Educators get increased completion rates for industry-valued credentials and can supplement existing programs with proven offerings from other network members.

Learners can stop wasting time and money on educational modules that lack market value. Learners can get start getting training that may not have been previously available but is highly valued. Learners can track how other learners actually convert their different industry-valued credentials into different jobs.

## Use Case Scenarios

Community college student John is looking at the online course catalog for a 3-credit elective. He notices that each class also has an “Industry” value icon ranging from 0 to 3 credits that corresponds to a 0 to 100% rating based on the demand for the competencies in the course. Mike ultimately decides against the 0.0 rated “History of Rock and Roll” and the 1.1 rated “Psychology 101” in favor of the 3.0 rated “Business Communication Skills and Technologies”.

Mary, the hiring manager for Large Company A, uses the Credentialing Wizard to drag-and drop competencies into their ideal “shadow certification” template for a competency- based credential. When she presses submit the data goes into a comparison engine that automatically analyzes overlaps and gaps relative to the local community college offerings and their learner enrollments which have been mapped to competencies previously demand by many other companies.

Meanwhile Joe, the operations manager for Large Company A gets a text message with a link to a web form for reporting any deficiencies noticed in their recent new hires. He selects from a short list of prepopulated competencies that emerged in data previously aggregated from the inputs of hundreds of local businesses.

Bob, the CEO of growing Small Company B knows nothing about competency frameworks but he does know that the last 2 people he hired from the local community college had been trained well at some things he needed them to do and not so well at some other things. When he receives an automated email for his inputs on these matters, he clicks on the link and provides his observations as prompted, in less than one minute.

Manufacturing Workforce Dean Kathy gets an email with a link to the results of a recent automated employer “pulse” survey. The report shows a continuing uptrend in hires and employer satisfaction with hires from her college and a welcome downtrend in the number of unfilled positions. Clicking over to her updated dashboard she now notices a distinctively growing hotspot in unfilled demand for some training they recently stopped offering. She forwards the report link to management colleagues who ultimately decide to reinstate the old program with a fraction of the money they save from eliminating several current programs that have been reporting at zero employer demand value.

Department Head Bill gets an email with a link to an automated report that shows common demand and deficiencies for a bundle of “Computer Skills” and “Workplace Math” competencies. He forwards the email to his counterparts in the computer and math departments who use the Credential Wizard to create two new 8-hour fractional course modules that are opened to current students and employees of local companies.

Several months later Depart Head Susan, at a college 1000 miles away, gets a similar report showing a local need for “Computer Skills” and “Workplace Math” competencies. Her report also includes a link to recommended programs and she sees the 8-hour nano-credential programs that were implemented at another college with high employer satisfaction ratings. She clicks on a link to the program curriculum, assessments and instructor training modules and then forwards it to colleagues with a recommendation for immediate adoption at her college.

Months later, Workforce Dean Kathy gets an email alert with a link to a report showing a demand threshold has been met (like a Kickstarter for new training and credentials). She sees that 5 companies are backing demand for a bundle of “Statistics” and “Computer Skills” competencies for 10 upcoming jobs with names like “bioinformatics technician” and “clinical trial analyst”. She links to recommended programs for each of the standardized competency units and quickly drags and drops them into a one term credential that is mapped to employer demands. She clicks a button that sends the proposal to the 5 companies for online review which comes back manually verified and funded within a few days.