

REMARKS FOR NEBA LUNCHEON, Feb. 23rd, 2011

Good afternoon, and thank you for the opportunity to be your keynote speaker though I must admit I find the responsibility a little intimidating. When I sat down to pull my thoughts together, just for kicks, I looked up synonyms for the word 'keynote'. They include: important, crucial, major, essential, defining, significant, and central. This did nothing to allay my fears.

That said however, I think the reason for this luncheon today – to celebrate how business and education are working together to develop our future workforce – does meet the criteria (whether the speaker does or not!). For really, what is more important, crucial, major, essential, defining, significant, or central to a company's future success than having access to a ready, qualified supply of talent to fill its jobs? This has certainly been a crucial ingredient in Cerner's success over the years. When I joined the company in the early 90's, we had roughly 800 associates. We ended last year with over 8000 associates worldwide, and it's likely that we'll double in size again before the end of this decade. With this kind of continued growth, ensuring we have the right talent available to do the job just isn't something we can leave to chance. Many of my colleagues at other companies feel the same way.

In fact, I think most of us would agree that a ready, educated workforce is vital to the future economic health and competitiveness of our entire community, not to mention our state and nation. While it might have been safe to assume a workforce like that was in place 50 years ago, it no longer is the case... times have changed... and the pace of change is accelerating. Technology permeates everything we do and touch. Information overload is status quo if you are plugged into any technology at all. So it should be no surprise that this increasingly complex world requires increasing levels of skill and critical thinking to navigate and deliver results.

Let's look at some facts to get a better understanding of the scope of the shift.

This graph from the Georgetown University Center on Education and Workforce illustrates the impact technology and the information explosion has had on jobs in the workplace. As you can see, in 1973, roughly 1 in 4 or just 28% of jobs required education beyond high school. By 2007 however, that number had increased to more than 1 out of 2, or 59%...and the trend continues. By 2018, an estimated 63% of jobs will require education beyond high school. Interestingly, and somewhat counter to the prevailing messaging to high school students about what their education goals should be - roughly half of these jobs will require some level of post-secondary education or certification but not a bachelors degree. More on that later!

Now let's take a look at supply.

Forget for a moment that our general population demographics (worldwide) are working against us as baby boomers begin to retire and a much smaller pool of workers emerges to take their place... let's focus on how that small pool is progressing through the education system. The facts are that here the US, and in Missouri and Kansas as well, of every 100 kids that start high school today, only 75 finish. One in four drop out, and their job and earnings prospects are dim as a result. Of the 75 students who

do graduate, a significant percentage – 70% on average – pursue post-secondary education of some kind. Yet only half of them, 55-58%, finish within 6 years. In other words, if the finish line is completion of post-secondary education of some kind, only 30 of our original 100 are currently making it across. I know these statistics are not new news to the educators in the audience, and I really hope they aren't new to the rest of us either. But I think too often we look at these in the abstract and think in the back of our minds that they are talking about somewhere else, that they won't really impact OUR community or OUR business. That's simply not the case. These numbers may be slightly better, or slightly worse in given districts, or for given demographic groups, but the trends are unmistakable and they will impact all of us economically, sooner or later.

Let's look at the facts from one more angle... specific to jobs that will require STEM skills.

Job projections are that Missouri and Kansas will add roughly 185,000 new jobs in STEM-related fields between now and 2018. Keep in mind that we are already experiencing shortages in several STEM areas today, such as information technology and healthcare, and as the economy picks back up we anticipate this will worsen. Where will these workers come from? Looking at the student pipeline, there are roughly 100,000 seniors across the states of KS and MO. IF all those seniors graduate, and IF 20% of them or 20,000 pursue STEM studies, and IF all 20,000 persist in and graduate from the programs they pursue... in seven years we will still be short some 50,000 workers (don't forget, there are likely a few that will retire between now and then who will also need to be replaced). Granted, this is a simplistic model, our assumptions could and should be debated, and there are other sources of workers, including those displaced from other industries, who could enter the pipeline. But the bottom line is if you are an employer of STEM talent, you are getting pretty nervous about your ability to meet your future labor needs with local talent alone. And unfortunately the situation doesn't look much different in other markets.

Cerner began thinking about this challenge several years ago when we faced the reality of dwindling IT and STEM enrollments on campus.

We had already been doing a significant number of college internships, and we realized we needed to connect still earlier to understand and impact the experiences students were getting in school and elsewhere that influenced both their capabilities and their choice of what to study. As we engaged with k-12 and post-secondary partners, we realized a few key things.

- 1) First, despite the breakneck speed of change in our world, the manner in which we educate students was and still is remarkably unchanged from what it was 50 years ago.
- 2) Second, even though WE thought employability was important, there was really very little in the system that encouraged educators to ensure a student actually made it across the finish line AND was employable and productive.
- 3) Third, we realized that many educators, despite their best intentions and efforts, lacked the opportunity for industry experience needed to help students understand the relevance of what they were studying. Students want to know why algebra matters in the real world. And we knew from our own experience as adult learners how important relevance is to motivation and engagement... it is what keeps the tough going when the going gets tough.

- 4) Finally, we realized that despite the fact that in our world people worked together in teams on projects with loosely defined inputs and outputs that span multiple disciplines – students rarely had the opportunity to work that way. When they did, it was most often in applied learning courses that were taught to small numbers on the ‘fringe’ of the system – in special career or vo-tech centers. Or in community colleges. And strangely, these weren’t really places that students were encouraged to go – despite the fact that we find talent in these places that can not only be productive quickly but is also eager to learn more and willing to do the work it takes to do so.

As we thought about these challenges, and the lack of what I like to call a ‘closed loop’ between education system and its clients (at least employers like us) – we decided we had no other choice but to invest in changing the system... to ‘Be the Change We Wish To See In The World’, borrowing the words of the late Mahatma Ghandi. Like other businesses being honored here today, we went in search of education partners who were willing to innovate and take risks along with us in order to close the loop and ensure students are developing the capabilities they will need for college AND for future employment. People who understood that students must not just be knowledgeable, but knowledgeable... able to learn, to find, sort, analyze, share, discuss, critique, and create information, apply it to solve problems, working collaboratively with others. We were lucky to find not only progressive leaders but also supportive boards who understood the importance of relevant, rigorous learning opportunities and the need for change.

Together with our partners we’ve launched initiatives such as Cerner Scholars and KCIT, both programs that bring students into the workplace to apply their skills as they work alongside professionals to solve real-world problems. We are also pursuing ways to better connect teachers to industry – through externships, job shadows, and professional development opportunities that provide them with real-world projects and problems to take back into the classroom.

In addition, we’ve identified promising innovations already happening in our schools and worked to support or expand their efforts. These include programs like those offered at Summit Technology Academy in Lee’s Summit, the CAPS (Center for Advanced Preprofessional Studies) center in Blue Valley, and Project-Lead-The-Way and Robotics programs across the metro.

One of the things that is most challenging for business when it comes to working with education is working with districts separately on issues that span the region. From the district side, the more relevant and real-world a program is, the more expensive tends to be... these investments could also span or be shared across multiple districts. This is why Cerner is working with other regional STEM employers, educators, professional societies, and partners to form an alliance focused on increasing the number, quality, and diversity of job-ready STEM candidates in the metro area. We think an alliance like this could provide a shared infrastructure for existing and future programs, including coordinating things like advocacy, educator professional development, event management and fundraising, data collection and program evaluation. Our goal is to reduce duplication of effort and streamline resources in support of proven programs that develop STEM skills region-wide, such as the ones mentioned earlier.

I've talked a lot about education and changes we'd like to see. Let me close by sharing a few things I believe employers can do to speed the pace of this change along, which incidentally tie nicely with the awards that have been given today!

- 1) Revisit the assumptions you might be holding onto about what students can/can't do and create opportunities for learners in your world. Assume they are capable until proven otherwise, and resist the temptation to lower the bar at the sign of failure. I want to point to a few quotes and some of the work from our Cerner Scholars.
- 2) Know and what you need in future hires, and make your voice heard if you are not getting it. We shouldn't expect the system to change unless we – the clients – define and articulate what we need and what we value. If your needs are similar to those of other employers, join forces to make your voice louder.
- 3) Insist on accountability, but be prepared to participate in the process so we are measuring outcomes that matter. In business, we are well aware that we manage what we measure. We also know the unintended side effects that can come when we define measures too narrowly, or overcorrect, so we need to make sure innovation and creativity are part of the outcomes we are looking for, in addition to problem-solving, communication, collaboration, and critical thinking.
- 4) Finally, realize that no matter how hard you think our job is – the job of educators is probably harder! They work in a system that answers to multiple stakeholders – tax payers, parents, employers with different priorities and expectations for the return on their investment. They, like many businesses and individuals, are in a period of financial uncertainty, yet expectations are increasing. We have been there and understand both the challenges and the opportunities that arise during times of prioritization.

The awards given here today are evidence that good things can and are happening to bring relevance back into the system. The challenge as we leave is determining how to scale the best of these to generate an impact significant enough to prepare the workforce for the challenges that lie ahead. Thank you for your time and your patience today as I have shared these thoughts with you. If you are interested in the issues and would like to learn more, here are just a few of the resources that have shaped our thinking on the issue: 'Pathways To Prosperity', Harvard Graduate School of Education; Center for Education and Workforce, Georgetown University; and Michael Wesch, Kansas State University.