

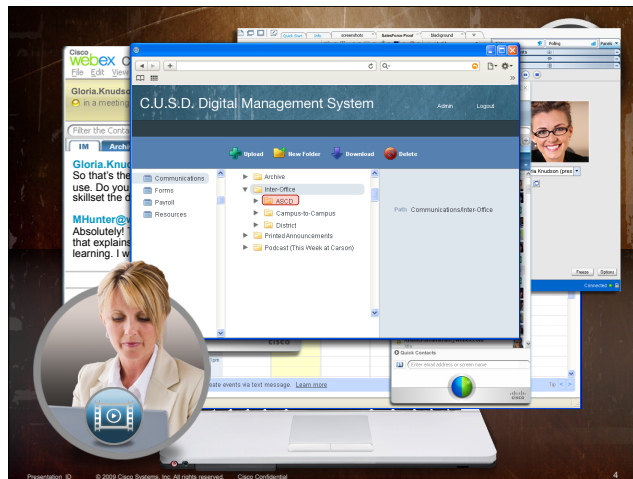
- This slide show is about a school leader in Carson Unified, the school district that houses H.S. 21+. This is an imaginary school that follows the principles of 21st- century learning outlined in *Equipping Every Learner for the 21st Century*. The presentation follows the school leader through a day of work, to illustrate the educational ideas suggested by that document.
- *Carson Unified is not a real district -- it's a hypothetical jurisdiction, invented for the purposes of this presentation, but nonetheless within the realm of technical possibility. This day in the life of the school leader parallels that of a student and teacher in H.S. 21+ which for best results should be experienced before this one*



- The alarm on Ms. Hunter mobile phone chimes with a flashing icon of falling snow. This means it's snowing at more than 1" per hour at the online weather station at H.S. 21+. The students programmed it to send an automatic message when the sensor reached this threshold level. She wakes her laptop, checks in with the SuperWeatherWiki (set up by a student project group at the high school) where her local colleagues coordinate school closings. No one else is closing today. An instant message arrives from the bus supervisor, reminding her of the new snow tires on all the district vehicles. She calls up the online security camera at the back door of the middle school and sees snow melting as fast as it falls. Lights off, back to sleep.
- *This education leader is not afraid of the nitty gritty of school operations, in part because she has harnessed the power of digital tools and networks to make her work more efficient. And the camera at the middle school, though designed as part of the safe-and-secure technology package, turns out to be useful for other purposes as well.*



- At the office, Ms. Hunter connects the microphone to her laptop and records *This Week at Carson*, her weekly podcast on the state of education in the district. Her assistant adds images to the recording, and sends it to the district's online Digital Media System, which adds it to the public web site. Community members who subscribe to the podcast will find it automatically downloaded to their computers and iPods.
- *Online multimedia enables the leadership to communicate with the public; the same servers and networks provide a wealth of on-demand instructional videos and podcasts for students and teachers. Standards-based video formats and a robust network enable the same digital resource to be displayed on everything from the 20-foot screen in the auditorium at H.S. 21+ to the iPod in the pocket of a sixth-grader.*



- Her online calendar reminds Ms. Hunter of a WebEx meeting with the chemistry curriculum committee. On her laptop, she watches a teacher demonstrate with live video a new laboratory technology they plan to use, and ask her opinion on how well it matches with the 21st-century skillset that the district has just adopted. Ms. Hunter replies positively, and links to a new video clip from the ASCD* that explains the importance of real-time data analysis to student learning. The clip downloaded to the district's Digital Media System as part of a subscription with the national curriculum organization.
- *ASCD = Association for Supervision and Curriculum Development, a national professional organization.
- *Desktop videoconferencing technology enables full-fledged participation in policy meetings by all constituents no matter where they are working. Everyone in the district aims their professional and curriculum development work at a common set of new skills that will be essential to their students' future. And digital video on demand through the network provides a rich set of resources for learning by both educators and students.*



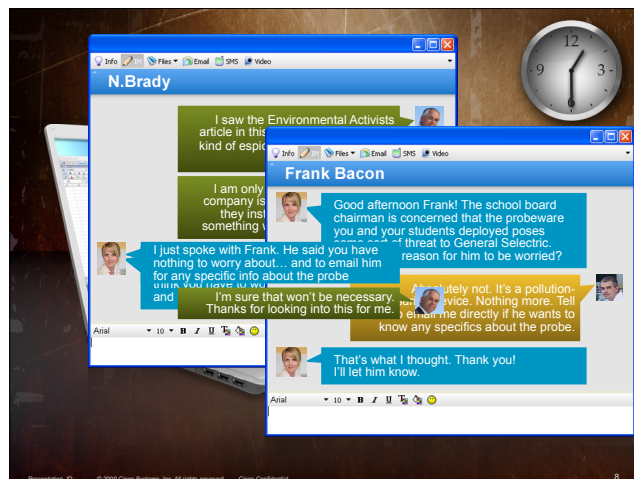
- At E.S. 4 in downtown Carson City, Hunter conducts a walkthrough -- an unannounced visit with the principal to three classrooms. She does this in a different school each week, not to evaluate the teachers, but to ascertain the presence of 21st-century skills in this elementary school. She takes notes on her iPod about what she sees, and captures a video clip of an especially provocative discussion among a small group of students. Later in the week her notes and the video clip will be the subject of a faculty meeting at the school.
- *21st-century skills, and the many different ways they can be developed, are on everyone's mind in Carson Unified, and the focus is on what happens in the classroom. The leaders at the building and district level spend many hours each week in classrooms, looking for evidence of the kind of teaching and learning that lead to these skills.*



- The video clip in the online portfolio showed excellent elocution and powerful presentation skills on the part of the first candidate...but little student engagement, and no evidence of 21st-century skill development. The second candidate sent up by the hiring committee was not nearly as polished, but her video clip showed an ability to pose questions, listen to students' responses, and delve deeper into their thinking. Hunter checks out her responses to the Teacher Technology Profile, adds her impressions to the running commentary from the rest of the committee, and then schedules a live WebEx interview -- the candidate works in another district 250 miles away -- for later in the afternoon.
- *School leaders at Carson Unified know more than ever before about the teachers they hire, with online portfolios, video evidence of teaching practice, and the ability to interview over the network. The digitization of the candidate's record makes it easier for more people to be involved in the hiring process.*



- After checking his online personalized professional development plan, Ms. Hunter approves three credits for science teacher F. Bacon at H.S. 21+, who has completed an online course in deploying probeware in high school science courses. She recalls a photo of Bacon and his students, smiling in muddy boots and mosquito nets, that appeared in the local paper under the headline Environmental Activists.
- *Each teacher in the district develops with the principal a personal professional development plan for the year, always aimed at 21st-century skills, and stored online. More and more, their plans include distance-learning exercises focused on new methods for teaching their subject specialty.*



- A new window pops up in Hunter's instant messenger. It's from the school board chair, who is concerned about student activists from H.S. 21+ preparing to attack his company, General Selectric, whose plant is just up the river from the city. A quick I.M. exchange calms down the insistent industrialist, and reveals that a group of high-school age students were seen placing some kind of pollution-measuring device on a bridge downstream from the plant. Nothing more. Hunter agrees to find out what's up, pings Bacon by I.M., and reports back to the board chair, all within two minutes.
- *The people who conduct the business of Carson Unified schools, from the board to the leaders to the teachers to the parents to the students, use a wide variety of digital communication channels to work with each other, the most useful of them being instant messaging: less interrupting than a phone call, faster than an email, more efficient than voice, and easier for the receiver to manage.*



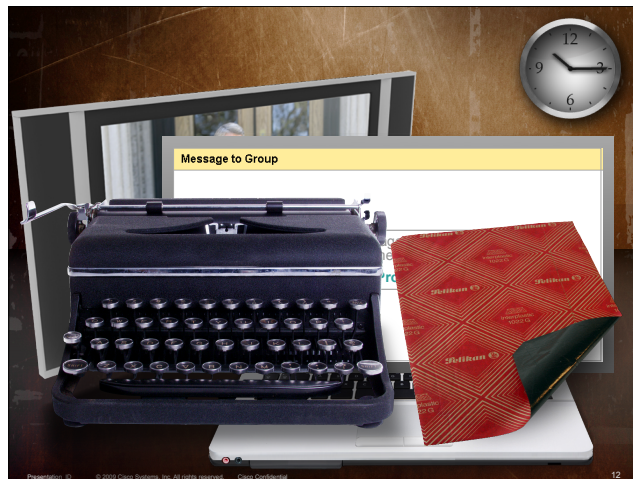
- To prepare for her meeting with the state education department later in the afternoon, Hunter analyzes attendance data from the high school over the last five years, which is now stored on the school attendance messenger server for easy access. Her analysis shows that the attendance rate has risen by four points over the last two years, since the server began sending automatic messages -- by email, I.M., text, or voice as the parents desire -- whenever their children are absent.
- *Attendance is not just an administrative detail in Carson Unified -- it's a key indicator of students' engagement with school, and as such deserves the attention of the leadership. The application of technology to this issue has made it easier to manage, from the reporting through the teachers' IP phones to the parent messaging to the analytical reports.*



- From the telepresence room down the hall near the mayor's office, Hunter explains to the Deputy Commissioner across the virtual table from her how the parent messaging system at Carson works and how it has helped raise the attendance rate. A school leader from another part of the state asks her about parent reaction to this seemingly obtrusive system. The discussion is fast, furious, personal and productive.
- *Hunter travels less and less to the state capital for meetings, yet finds herself more involved her peers and with statewide educational issues. High quality video conferencing lets key leaders meet as the need arises, without the time and expense of travel. And permits honest and frank discussion of sensitive issues with the full gamut of human expression.*



- At the board meeting, Hunter displays from her iPod the slide comparing the future cost of printed textbooks versus online courseware. She juxtaposes this graph on the big screen with the results of the recent survey of students, parents, and teachers on the same issue. The discussion ranges far and wide, until a majority of the board votes to shift the district's policy toward digital materials wherever possible.
- *The data and presentations the school leader needs are accessible through the network, on a computer, or on a mobile device: same digital format, same display. The systems and the devices are designed to work together following open standards that are compatible with a wide range of platforms. And data are used throughout the system for decision making at all levels, from the students conducting their research at H.S. 21+ to the citizen representatives in the board room.*



- Watching the nightly local news, Hunter hears of the H.S. 21+ students' podcast at the state legislature. She sends a quick message through the district's learning management system to the students in that project group, congratulating them and their teacher on the quality and effect of their work. A carbon copy goes to each student's digital portfolio. As she falls asleep, she wonders if any of those students know what a carbon copy really is.
- *H.S. 21+'s learning management system knows which students are in the various groups and courses, and makes it easy for their teachers and leadership to target a message to a particular group. It's not unusual for the district leadership to involve themselves with the work of students, and the technology makes it possible to do so.*



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