



NPEW Education Conference

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Chief Executive

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Towards Digital Fluency



The digital environment has the power to transform teaching and learning in our schools. We're committed to taking full advantage of the opportunity to become a world-leading education system through changes to our infrastructure, practices and pedagogy. The range of initiatives for Digital Technologies in Education will ensure all New Zealand schools are equipped with state-of-the-art infrastructure, teachers get the support and resources they need to be digitally fluent, and every student benefits from the advantages of digital technologies for learning.

State-of-the-Art ICT Infrastructure

- **Learning anywhere, anytime • High-speed broadband for all schools • Fully funded uncapped data • Integrated IT systems**
- ✓ **Equip all schools with the infrastructure they need to take full advantage of digital technologies by the end of 2016**
- Complete delivery of fibre or alternative technology to remaining 3% of state/state-integrated schools by the end of 2015
- Enable all state/state integrated schools and kura to connect to the Managed Network by the end of 2016
- Complete ICT Network Upgrades in all state/state integrated schools by the end of 2015
- Complete wireless refresh in more than 400 schools by Dec 2016
- ✓ **Leverage opportunities afforded by new technologies to streamline systems and improve access to data and information**
- Enable schools to migrate ICT into the Cloud
- Design an Identity and Access Management system for teachers and leaders
- Enable student information to move easily between schools through interoperable student management systems
- Align ICT investments across education agencies and with the wider sector to create an integrated, seamless system that better serves the learning needs of students



21st Century Teaching & Learning

- **Digitally fluent teachers and students • Innovative teaching and learning practices • Robust evidence base**
- ✓ **Make digital fluency a priority**
- Complete the review of the position and content of digital technologies in the curriculum
- Provide specialist advice to schools via the Connected Learning Advisory service
- Provide a glossary of terms that describe modern learning practices (ERO)
- Include digital literacy as an indicator in ERO reviews from mid-2016
- Provide in-depth professional development for learning with digital technologies
- Prioritise digital fluency in future professional development provision
- ✓ **Build capability through collaboration**
- Support innovative teaching through the Teacher-led Innovation Fund
- Promote collaboration and innovation through Investing in Educational Success
- ✓ **Move to digital assessments of NCEA**
- By 2018 at least 3 digital examination subjects online; by 2019 NZQA external moderation service fully online; by 2020 NCEA external examinations online (where appropriate); after 2020 move progressively to online exams on demand, anytime, anywhere
- ✓ **Build a robust evidence base**
- Commission national reports from ERO on how schools are adapting teaching and learning practices to take advantage of digital technologies and flexible learning spaces
- Partner with Melbourne University to research innovative learning environments and teacher change

Access to Quality Content & Resources

- **Accessible online content • Smart digital tools • Safe online environments**
- ✓ **Make online content easy to find, share and create**
- Redevelop Te Kete Ipurangi (TKI) so teachers can find, use and share valued, quality-assured content more easily
- Digitise education resources and create resources for schools using a range of digital formats
- The National Library is transforming its supports to schools to increase the reach and impact of its services
- ✓ **Promote resource development by teachers and students**
- N4L Pond is acting as a central hub for digital discovery and participation; enabling teachers to collaborate; and educational resources to be created, accessed and shared easily
- ✓ **Develop and promote smart online tools**
- Promote the use of the Progress and Consistency Tool (PaCT).
- Build on the Assessment Resources Banks (ARBs) for English, mathematics and science
- Upgrade e-asTTle
- ✓ **Ensure safe, secure online learning environments**
- Firewalls and content filtering systems to schools provided as part of Network for Learning services
- Advice and support on cyber safety provided to schools, students and parents via Netsafe
- Develop advice to schools on the implications of the Harmful Digital Communications Act

Equitable Access

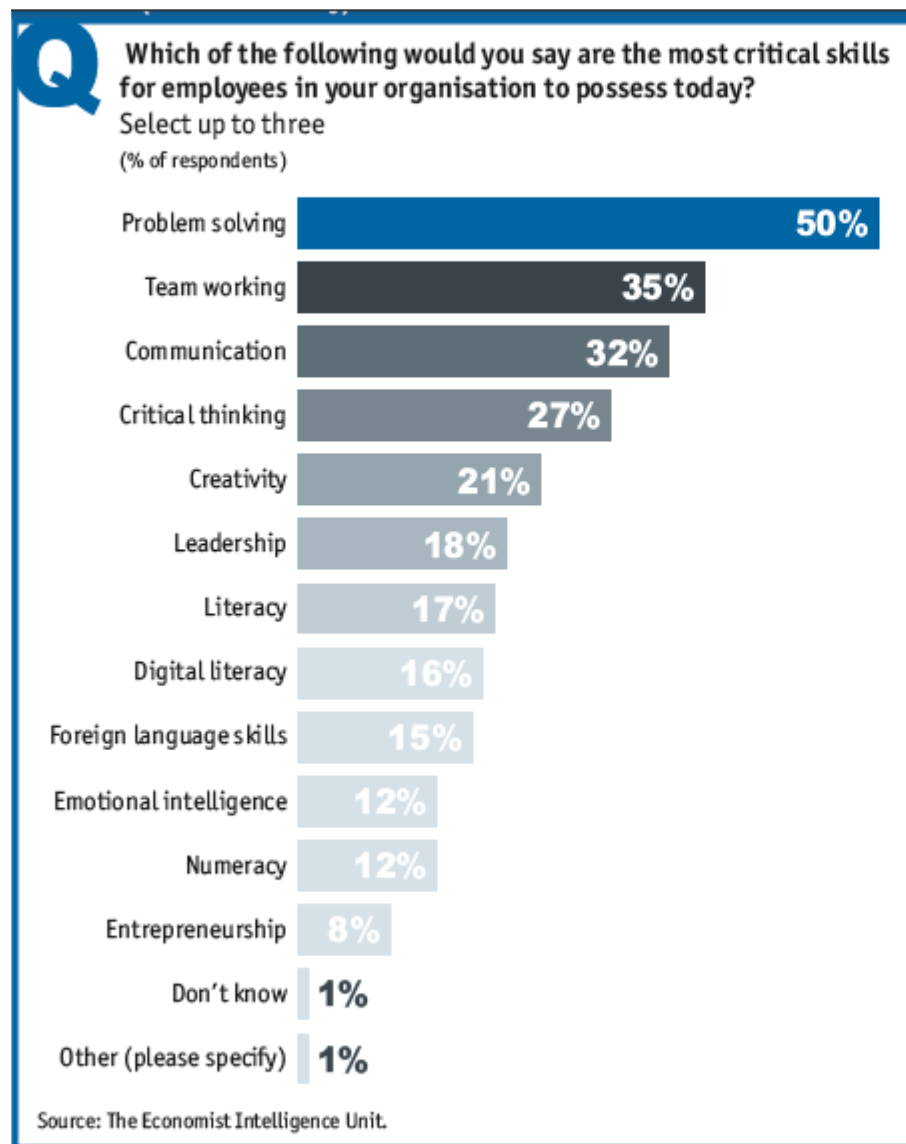
- **Digital learning for every learner regardless of location, learning needs or family background**
- ✓ **Provide guidance on implementing digital devices**
- Develop further online guidance to help schools decide when and how to implement devices, how to engage their communities and how to ensure no student misses out
- ✓ **Transform learning for students with special needs**
- Apply Universal Design for Learning principles as new resources are developed so that they can be used by all students, including those with disabilities, without having to be adapted
- Provide assistive technologies to give students with special education needs access to the same learning opportunities as their peers
- ✓ **Identify and share ways to ensure equitable access to digital devices and opportunities to learn digital skills**
- Support schools and communities of schools to share models of effective practice that are achieving equitable access, such as Manaiaakalani
- Support the adoption of initiatives to enable students to use the internet out of school hours, such as schools as digital hubs
- Encourage schools to work in partnership with the private sector, iwi, local government and philanthropists to help ensure students have access to digital devices, can acquire digital skills and have access to online learning resources out of school hours

Driving the skills agenda:

Preparing students for the future

An Economist Intelligence Unit report, sponsored by Google





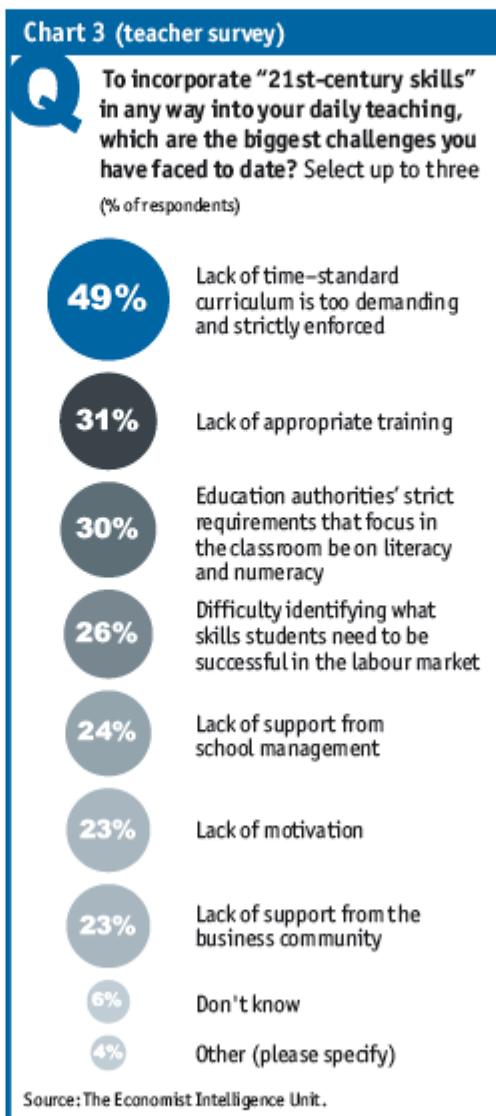
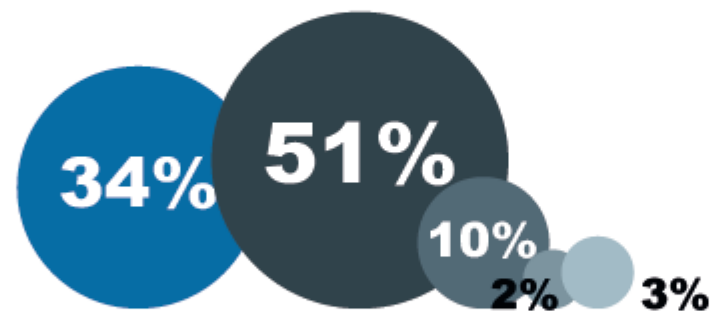


Chart 4 (teacher survey)

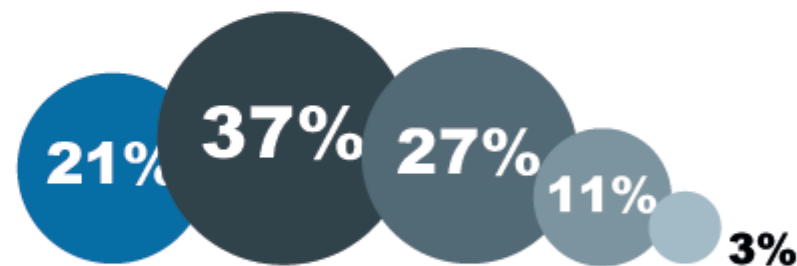


To what extent, if at all, do you agree or disagree with the following statements?
(% of respondents)

● Strongly agree ● Somewhat agree ● Somewhat disagree ● Strongly disagree ● Don't know



Technological advances (eg the explosion of mobile devices and social media) have changed the way I teach



Students in my classroom often have a more advanced understanding of technology than I do

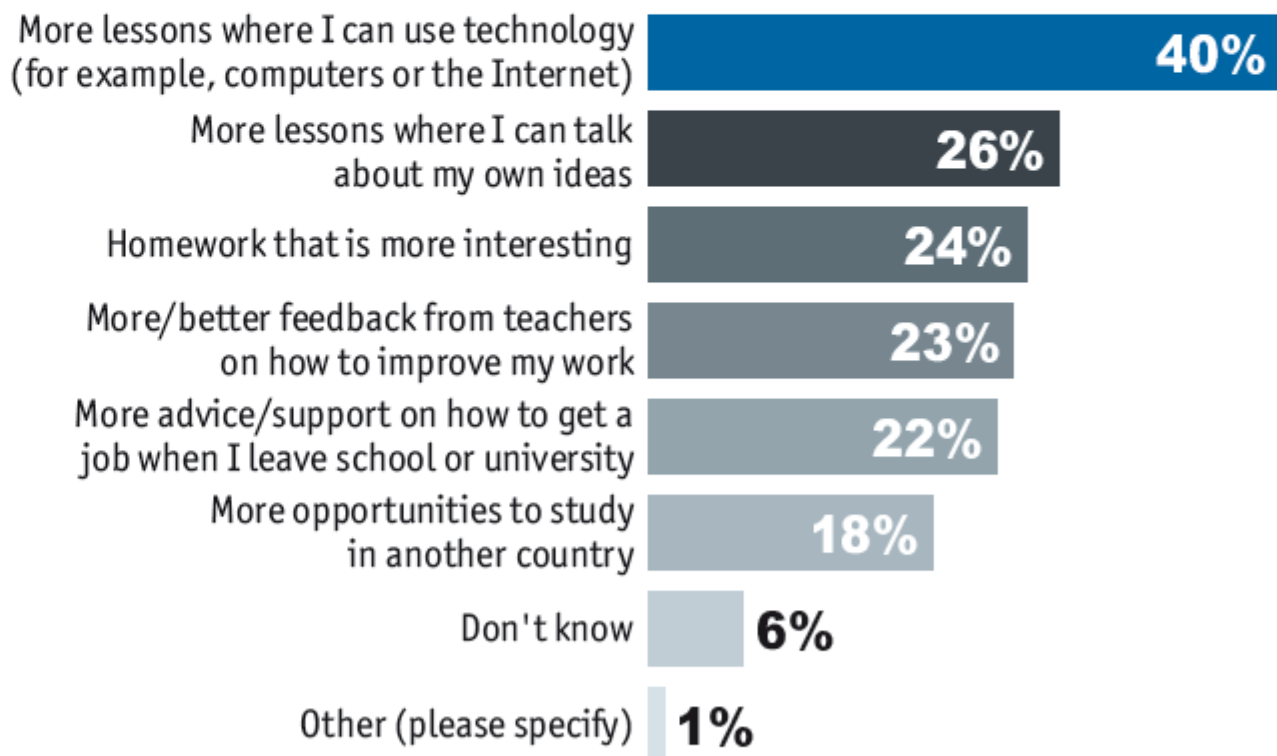
Source: The Economist Intelligence Unit.

Chart 5 (survey of 11-17-year-olds)



What changes, if any, would you most like to see in your school?

(% of respondents)



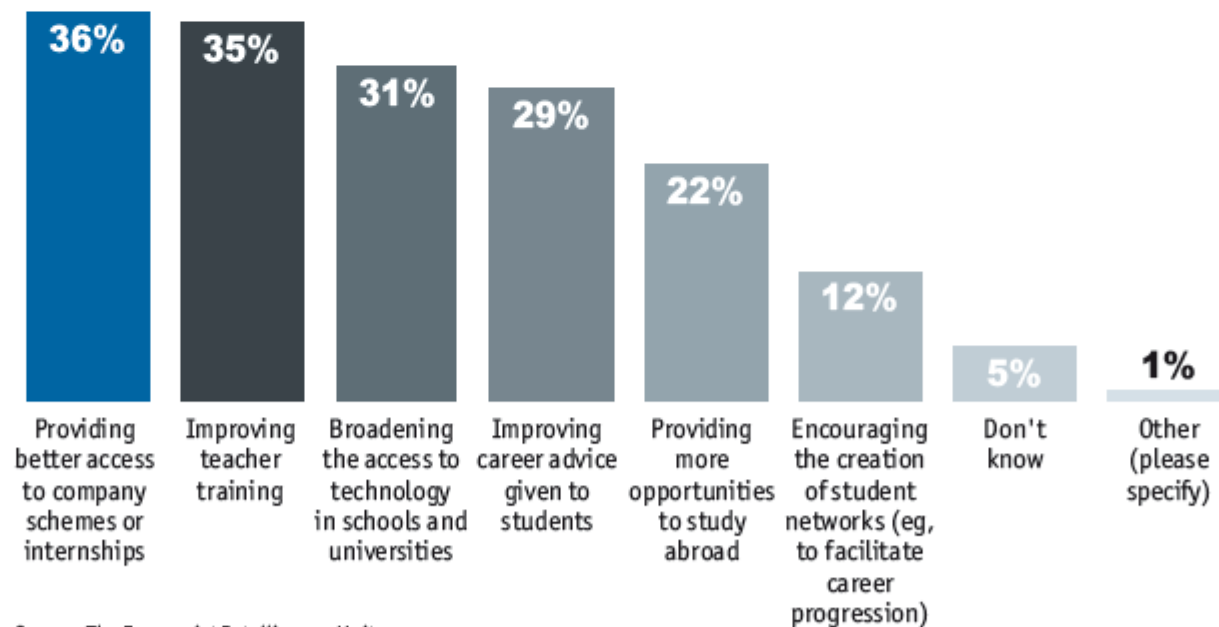
Source: The Economist Intelligence Unit.

Chart 6 (business survey)

Which of the following changes to your country's education system, if any, do you think would benefit your business?

Select up to two

(% of respondents)



Source: The Economist Intelligence Unit.

THE FUTURE OF WORK WITH KATHRYN MYRONUK



DIGITAL FABRICATION WITH ANDRE WEGNER



ROBOTICS WITH ROB NAIL

it's actually **LESS** about **THEM**,
and **MORE** about **US** and

OUR SOCIAL RELATIONSHIPS

TESTING our
SOCIAL
INTERACTIONS.

AND THOSE
CONNECTIONS.

POPULARITY
OF
TELEPRESENCE
ROBOTS
HAVING TANGENTIAL
IMPACTS TO TRAVEL,
CONVENIENCE, LAWS,
RESTRICTING PHYSICAL
PRESENCE, ETC.

OSHBOT: INVENTORY MGT SYSTEM
THAT INTERACTS WITH SHOPPERS
IN NATURAL LANGUAGE.

- ROBOT BUTLERS.
- ROBOT ROOMSERVICE.
- "AUTOMATS" FOR FOOD.

TAKES US BACK 200 YEARS
TO OLD FASHIONED
CUSTOMER SERVICE:
PERSONALIZED,
EXPERT KNOWLEDGE,
TIED TO PERSONAL
LIKES/DISLIKES,
PAYMENT SYSTEM.

CREATING NEW
VALUE ECOSYSTEMS.

DRONE
OPPORTUNITIES

- DELIVERY OF ANYTHING ANYWHERE
- "FLYING CARS"

• AGRICULTURAL SCREENING

"SKY SPEEDBUMPS"

- FAA REGULATION
- PILOT LICENSE REQUIRED FOR COMMERCIAL USE.
- LOOK AT THE APP B4U FLY

CONTROVERSIES

...THE DARK SIDE

- GIVING WEAPONS TO ROBOTS IS A BAD IDEA.
- ...NOT ALL COUNTRIES/GRUUPS FOLLOW THE DSD POLICY OF HAVING A HUMAN IN THE LOOP.

COMPANION ROBOTS

- FOR PURE SOCIAL APPLICATIONS
- FOR SEXUAL HEALTH.

OUR LIVES.

UNTIMED, OUT-IN-THE WILD ROBOTS
THE **TODDLER** STAGE.

WHO WILL WIN THE PROGRESSION RACE?
TODDLERS OR ROBOTS?



BAXTER

A UNIVERSAL ROBOT
THAT IS AWARE OF THE ENVIRONMENT
AND A PERSON **SHOWS** BAXTER
WHAT TO **DO**.

NO "PROGRAMMING"
NEEDED!
SHOW ME!

• ROBOTS **BOTH TAKE AWAY** AND
ENHANCE JOBS.

- Clear debris.
- Perform simple tasks.
- Negotiate terrain.
- Open doors.



ROBOTS THAT CAN INTERPRET EMOTION.

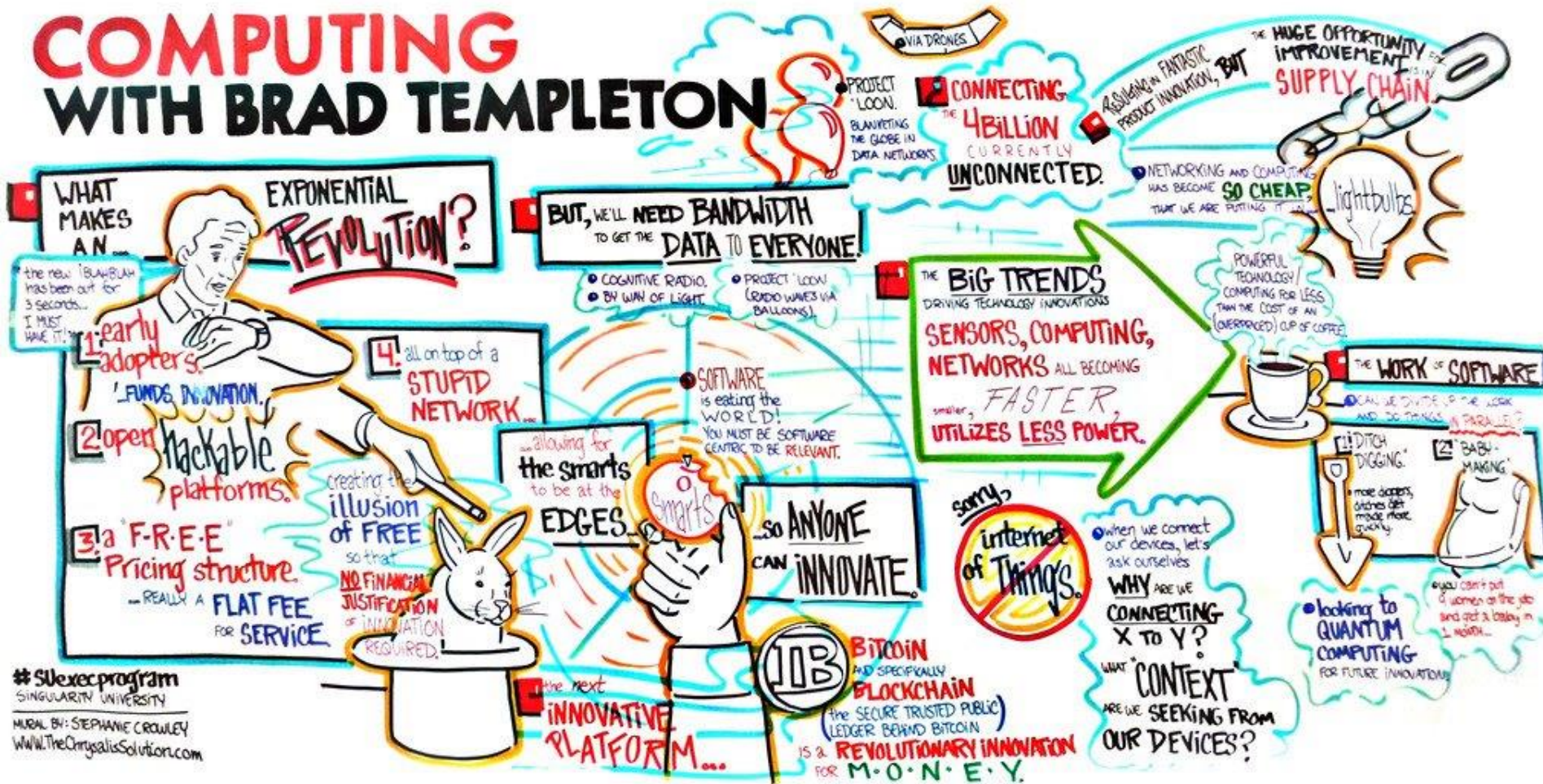
ENHANCING, NOT DISCONNECTING,

#SUXecoprogram
MURAL BY: STEPHANIE CROWLEY
WWW.TheChrysalisSolution.com

VIRTUAL & AUGMENTED REALITY WITH JODY MEDICH



COMPUTING WITH BRAD TEMPLETON





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