

A personal sharing about the COMP delegation visit at NTU, NUS, A*STAR and CREATE in Singapore

Rocky K. C. Chang

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A delegate of two arrivals

- Jiannong, Dan and Alvin arrived on Monday, visiting
 - School of EEE at NTU on Monday pm and
 - the Institute of Interactive and Digital Media of NUS on Tue am
- Eric and I took an early morning flight on Tue.
 - Joined together at CREATE to journey on.

CREATE (Campus for Research Excellence And Technological Enterprise)

Top Research Institutions in the World



<http://www.nrf.gov.sg/nrf/otherProgrammes.aspx?id=188>

- The current CREATE centres are:
 - Cambridge Centre for Carbon Reduction in Chemical Technology (C4T)
 - Shanghai Jiao Tong University-NUS Research Centre on Energy and Environmental Sustainability Solutions for Megacities
 - Singapore-MIT Alliance for Research and Technology (SMART) Centre
 - [The Singapore-ETH Center for Global Environmental Sustainability \(SEC\)](#)
 - Technion-Israel Institute of Technology, NTU and NUS Centre for Regenerative Medicine
 - [TUM-CREATE Centre on Electromobility in Megacities](#)
 - Hebrew University of Jerusalem's Research Centre on Inflammatory Diseases
 - UC Berkeley's Berkeley Education Alliance for Research in Singapore (BEARS) Research Centre
 - Ben-Gurion University, Hebrew University of Jerusalem and NTU research centre for Energy and Water Management
 - Singapore-Peking University Research Centre for a Sustainable Low Carbon Future

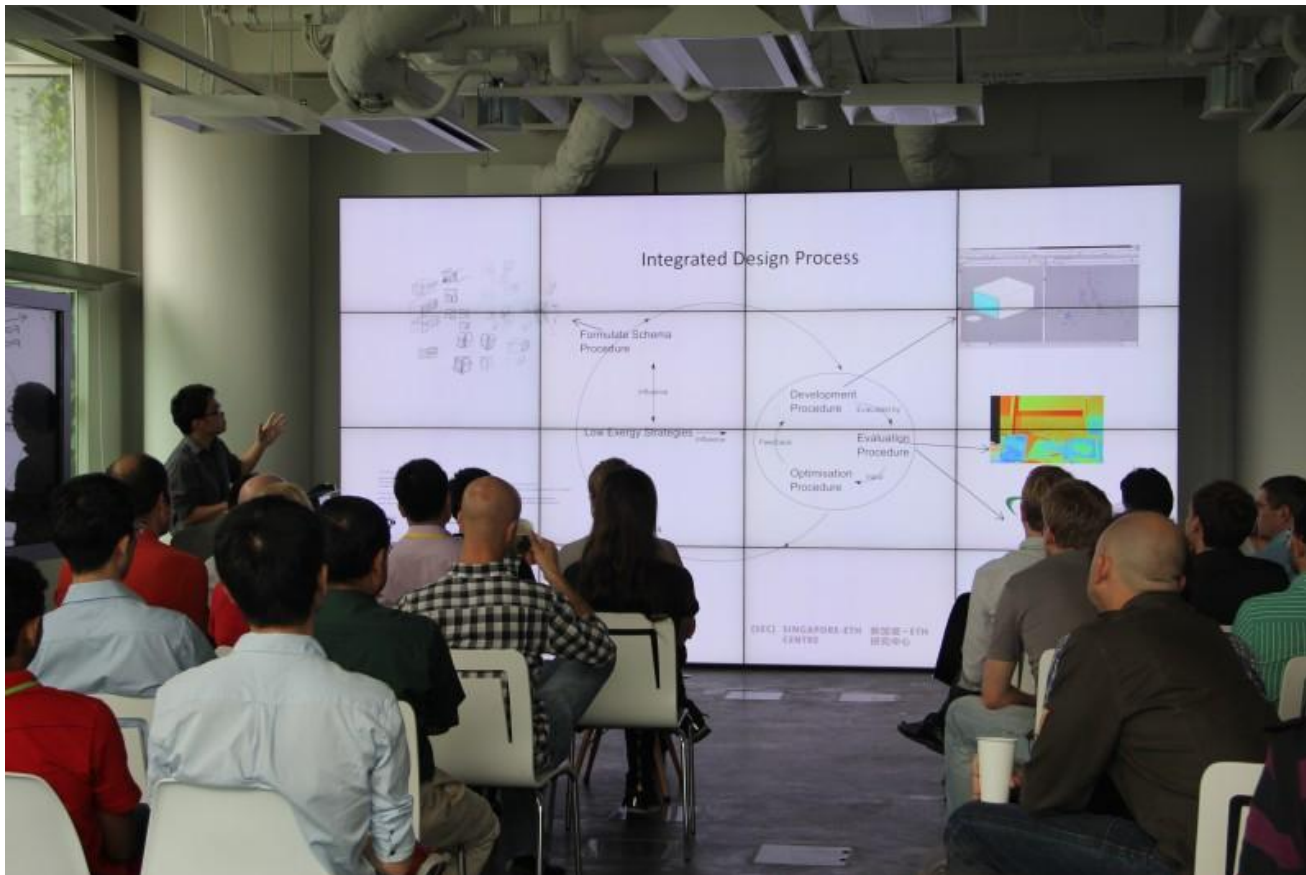
The Singapore-ETH Center for Global Environmental Sustainability (SEC)

- It is home to a community of over 100 PhD, postdoctoral and Professorial researchers working on diverse themes related to future cities and environmental sustainability.



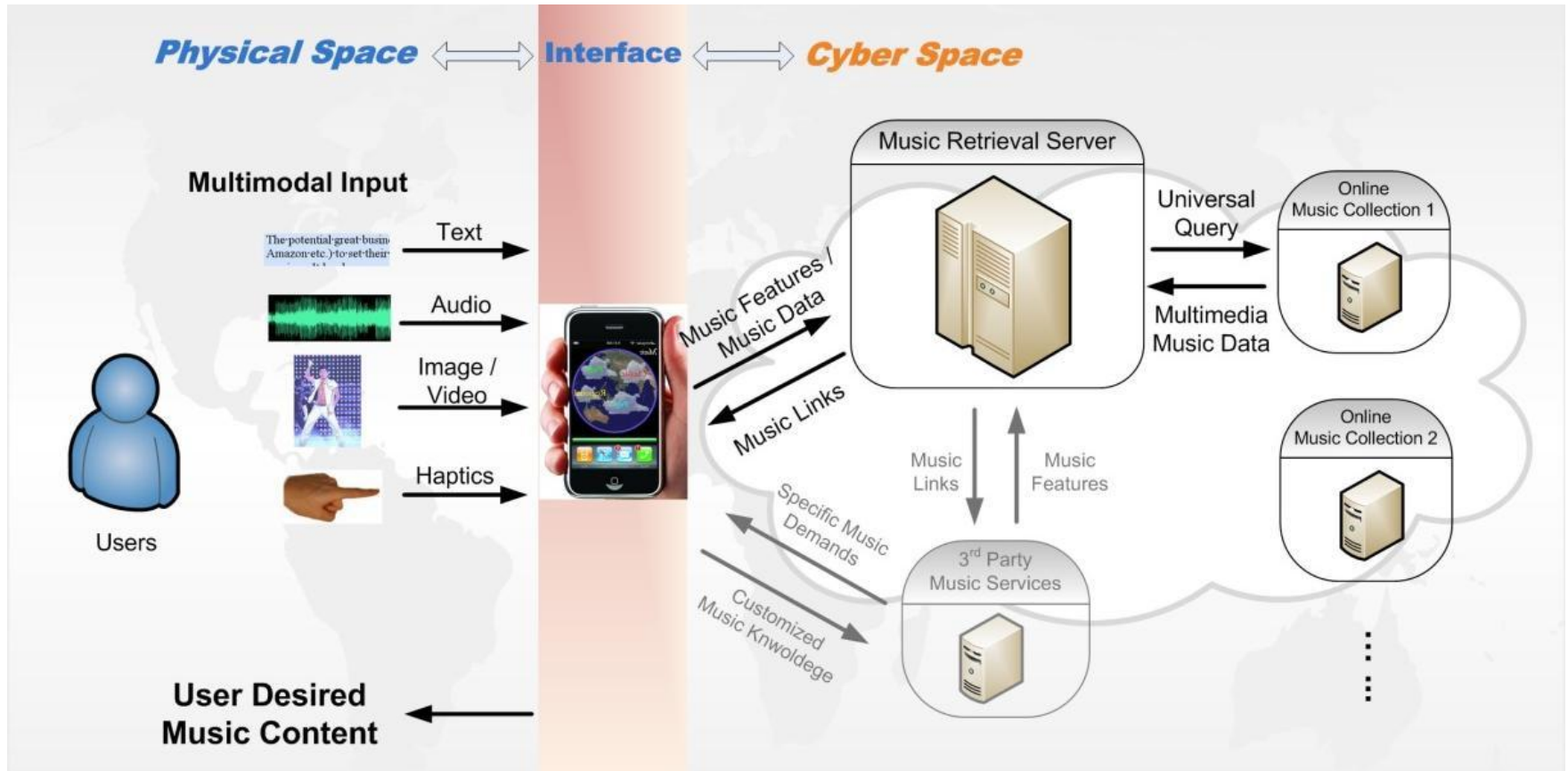
SEC (cont'd)

- Projects were brought in from outside (Europe?).
- Many international staff
- A platform for local researchers to interact with the international colleagues



Sound and Music Computing (SMC) Lab at NUS

(<http://www.comp.nus.edu.sg/~wangye/>)



SMC (con't)

- <http://r2m.nus.edu.sg/cos/o.x?c=/r2m/pagetree&func=view&rid=5627>



SMC (cont'd)

- Prof. Wang has a clear philosophy for his own research (and life as well).
- He likes what he does very much.
- His research facility includes a sound recording room.
- He recruits his research staff from all over the world with a postdoc from Harvard Medical School.

The end of the first busy day

- A national research facility vs one-man research group
- Aim at translating their research outcomes into economic or societal impact.

Dr. Wen's Social Cloud TV Lab at NTU

- Multi-Screen Social TV with Cloud Support

THE BUSINESS TIMES, TUESDAY, 14 AUGUST 2012, PAGE 9

Multi-screen social TV reaches for the cloud

NTU scientists' new tech allows users to stream TV shows onto mobile devices

By **KENNETH FOO**

RESEARCHERS here have pioneered the ultimate couch potato killer – a technology that allows one to “pull” programmes off a TV screen onto a mobile device and continue watching them seamlessly.

“Social Cloud TV” is a cloud-based system that enables users to share video on multiple devices simultaneously.

Users can also connect socially through instant messaging or video chats with multiple users while

the video is playing. This novel technology was invented by a team of researchers from the Nanyang Technological University (NTU) headed by Wen Yonggang, assistant professor at the School of Computer Engineering.

“With the increase in on-line video and personal multimedia devices, we have lost out on the experience of watching TV shows together as a family and as a social activity with friends,” Prof Wen said. “So I hope that with my invention, people can now reconnect with each other socially using videos.”

While social TV is a popular concept that has been bandied about tech circles over the past few years,

Prof Wen says that this is the first time a “scalable and usable” prototype has been produced that is fit for commercial use.

But prototypes had problems with scalability, in that the video streaming could not support multiple devices. Many also could not be commercialised as the technology was not advanced enough to be transposed onto a large number of devices.

NTU’s prototype solves both of these problems, and its intuitive interface system is tailored to the older generation.

According to Prof Wen, tech giant Apple’s latest attempt to crack the social TV market with its smart TV solution – the Apple TV – will



Reconnecting: Prof Wen with a social cloud TV-enabled tablet which can share videos and do video chats

be hampered by its isolated network platform.

“Any social TV experience relies on control of the underlying network and achieving network access,” he said, adding that his solution is positioned to “work with Internet service providers, not compete with them”.

NTU is now in talks with a local telco and a few other international service provid-

ers over the possibility of commercialising the technology.

Prof Wen declined to name the local player, but said that it would be the first to integrate the technology into its cable network.

He and his research team took 18 months to develop the prototype and it will be another one to two years before the technology is ready to hit the market.

The prototype is currently only available on Android, but there are plans to make it available on other mobile platforms. The software can be embedded in set-top boxes, home routers or televisions.

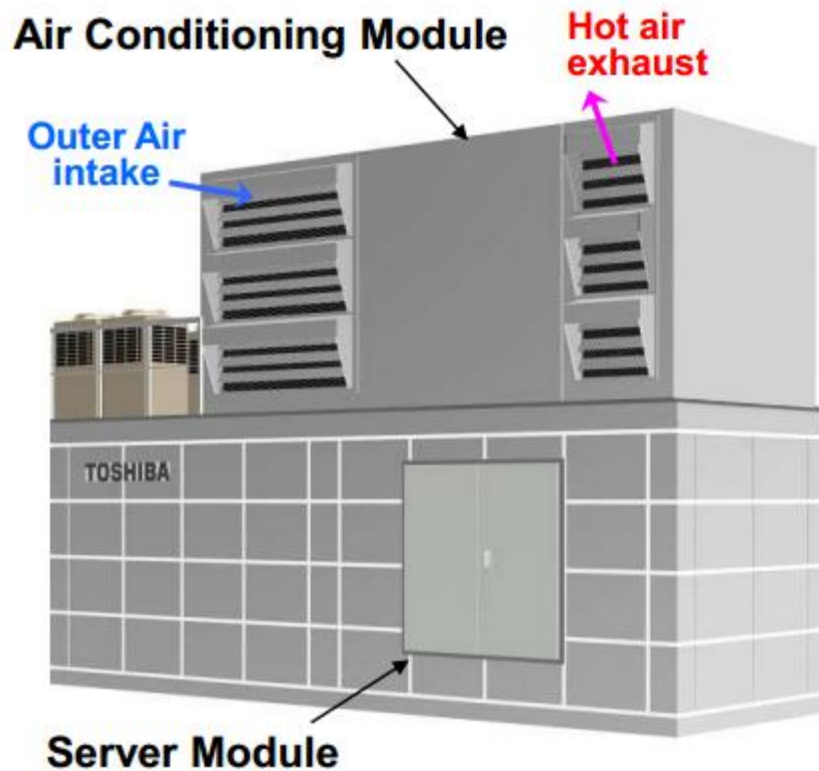
The system leverages on a cloud backend for media processing, enabling the same video to be streamed into devices in the most suitable format.

When viewing a TV show, a user can invite family and friends to join the session, by using his or her phone book or social networking contact list.

To further enhance the technology, Prof Wen said, he will set up a start-up company to seek additional funding and collaborate on projects with industry partners.

Social Cloud TV Lab (cont'd)

- NTU-Toshiba Modular Green Data Centre



with Façade

Social Cloud TV Lab (cont'd)

- Overcoming the problem of doing research without the necessary platform:
 - Build your own
 - Collaborate with others to co-build it.
- Use the social cloud TV platform to conduct research on cloud-centric media network and applications.
- Use the data centre to perform research on green data center, data center management, etc.

School of EEE at NTU

- A more formal meeting encompassing research and teaching.
- Six divisions: information engineering, control & instrumentation, communication engineering, etc
- Seven mega research centers
- Two joint laboratories
- Many academic programmes

Institute of High Performance Computing at A*Star

- The Agency for Science, Technology and Research (A*STAR)
- A*STAR oversees 14 biomedical sciences and physical sciences and engineering research institutes, and six consortia & centres.
- The A*STAR's research units are supported by the Biomedical Research Council (BMRC) and Science and Engineering Research Council (SERC)

A*Star (cont'd)

- Biomedical Research Institutes & Consortia
- Science and Engineering Research Institutes & Centres
 - Institute of High Performance Computing (IHPC)
 - Institute for Infocomm Research (I²R)
 - ...

IHPC (research on CS)

- Each one of us gave talks there:
 - Fault Tolerance in Wireless Sensor Networks (Jiannong)
 - Taming Software Development for Big Data Applications (Alvin)
 - Towards Open and Green Building Systems (Dan)
 - Towards the Science of Network Measurement (Rocky)
 - Parallel Analytics as a Service (Eric)
- Introduction to their research at IHPC

Concluding thoughts

- Different kinds of models of conducting research.
 - They may all be necessary.
 - No one size fits all.
- What was done there on individual level could be done anywhere else.
 - Those researchers were trained from US, Europe, HK, etc.
- What would we offer our visitors to see?
- What could we offer for collaborating with others?

Thanks