

okay sometimes i may be speaking i mean getting all the facts right i hope that's fine yeah nobody will see it except me yeah correct the facts yeah yeah okay let's uh let's start you know the question i always have you sort of answered it with your harvard uh harvard interview but it's only part of it i i really want to know you know you and i grew up in singapore yeah um it's not a childhood that is conducive to become a president of a university something something has you know especially for you and me you know unlike the our uh your your subsequent presidents both of them they are standard good students you know they they went through our eyes they they went through nus medical school or in u.s physics department and they went to yale immediately after their bachelor's or cambridge for medicine or something you and i you and i are very different um so what is it about your youth you think which you didn't say very much in your harvard interview uh that you think deeply what what make you what you are you know i think this is important not that not that it's curious for me but i think it is important for asians to realize there's no standard way of doing these things

you know as you call it we need mavericks and how do we promote mavericks and so on anyway so that's the general question

well i as i mentioned in my um

interview yeah you talk about long gangs you know i i love that word yeah yeah i used to fish you know i always love to explore and experiment i find learning books okay but i didn't find a lot of fun in learning from books i'd rather learn by on my own by experimenting by exploring things you know looking at insects looking at spiders why do spiders fight you know fighting spiders and do all kinds of things um i was never in the mainstream as you know uh i went to bd secondary school and then you and i went to paulie and i realized oh i think maybe we have better things to do than polly as opposed well you know a lot of poly graduates became very well to do yes they do they they they're fine you know i'm not criticizing that no no no because they were doing things different yeah you know they're very important to singapore's development exactly you know why because they're different that's right they do things differently i think in some way they were our stickers you know you and i took you know the last travel road right so-called so to speak and uh we learn a lot of perspective new experiences right new perspectives um so so we uh

that you will not get from just going to a good school and study hard and so forth i learned many things in my younger days by mucking around and running around and selling look at my books i learned about social interaction i i find out how you know basically to work with other youth of my age so yours and mine are very different experience and then going to us was really an eye opener you know north america at a young age what i was about 20 you you must be about 22 right around the time you went 19 yeah yeah yeah 20. so that was another eye-opener you know i said the things that i used to do are quite acceptable here for once right that's right if you do things differently to ask questions yeah and i i think that what struck me when i landed in what new york john john f kennedy airport and my my mother's friend drove me to new jersey and we went through uh george washington bridge yeah that was astounding to me yeah i couldn't believe that there's bridge that big you know now of course it's everywhere yeah but

coming from singapore you never think that things can be actually big yes you can see tall buildings

big airports told i remember airport in singapore that time was a rather small airport yeah in fire labor right it was impossible apparently that's right and also when when parents send us off they cry because they don't think they'll see us again that's right that's right and there was no greeting you just me at the gate and then you go in i mean i mean my memory is hazy but like it was uh yeah you just walk up the raft there was no meeting place there was no that's right yeah that's right so so in america was so different so so also i always had sort of different street i you know people call me a maverick i don't remember it's a good term because sometimes remember i describe someone who's uh problematic john mccain is an automatic john john mccain calls himself a maverick is that right okay i i think i just that i i do think differently that's right i'm not afraid to take risks i don't want to call myself maverick because i know in singapore context means it's just a lot of problems so i'd rather not use the word maverick absolutely yeah no i don't want to do it maverick i think i can sing a pokemon but i think i do things differently yeah but i do think in some constructivity why can we do this thing better why can't we do it differently i mean um so so so that's why in the u.s it's so good i mean i i remember

going to see my advisor

at harvard or mcgill uh at harvard yeah i was in mcgill for about a year and a half yeah to get a message to get a master's degree yes yes and then you left right away yeah my master's degree and then i said well maybe i should try at harvard because uh i do like the boston area also montreal was somewhat cold for me

montreal is colder than boston and boston is too cold for me oh is that right okay all right so you know what it is like absolutely a monte is a great city you know it's beautiful i like i like the downtown mantra or the french college so i had exposed the french culture in montreal oh i didn't stay here before you begin do you know lei nam chang lina chang yeah the two chang brothers nippong and lei nam they were all physicists one is that chairman a physicist at virginia polytechnic and the other one is ccny anyway nippong died last of uh this december due to covey oh i'm sorry yeah that was very sad he was stephen weinberg student oh wow yep and and nambus postdoc oh i see yeah anyway great loss for singapore but anyway okay go on

yeah because mcgill i didn't do a thesis just master so yeah yeah take courses yeah yeah get classes in yeah or a short paper anyway so at harvard i um

i went to my professor my name john hutchinson and i said yeah i'd like to work with you i say could you tell me a problem to uh work on look at me stranger here i don't tell all my students to work on so you go to library and look up some interesting what i've done whether they have done anything is interesting come back to me and we discuss oh yes my whole life have been told what to do that's the problem with asia yes okay i've always been told what to do what is right or what's wrong and you just do what i say so i say oh go to the library and read up what excites you then come back to me of course if you also excite me you should know what i know

so you want to read about me so don't come to see me because i'm famous just go read about me and what i've done and what you interest and what's interesting of all the people why did you pick him he was a young professor and i felt very friendly and he was in some way very interesting i'll tell you story later because you took a course from him how do you know about him oh to a question also he plays rugby i saw him outside young guy playing wrong with all the other guys who is the professor i like to work you can play with him and we did become the best of friends we have been friends since i could tell in that meeting you know harvard maybe 50 you know at that time he had cancer you know he still hosted my meeting yeah wow they've been feeling for 50 years oh amazing we've been friends for more than 15 years and i used to go his large stay with him so i say oh this guy can be your friend anyway where was i oh yeah i went to see him because i like him say hey i want to work for you he says okay so you say you go read up sorry that's something hey this seems to interest me so yeah i think it interests me too that was the beginning of the computer i said how do i do something in the computers now this is 1968 you know that's right barely early computer i said look with a computer i like to put this problem on the computer and see what i can do no this sounds interesting we've never done this before i like to learn it then call the finite element method i like to learn to say oh we don't even have a class in final element see but i can learn it oh he likes to see ooh so you see by being different in singapore i guess i i got some self-confidence maybe misplaced but i had self-confidence i thought i could learn how to build a computer learn financial matters and learning to solve the problem that he was interested in so after going back and forth and one day to him okay i think you're on but he told me something he said never forget

see if we're going to work together

but if you're going to get your phd

i better learn something new from you if you're just learning from me you're not going to get your phd i better learn something new from your research

you know that was a

that was a really profound it really affected me deeply right how scary from a famous professor he was a full professor at harvard you know that's right one of the youngest school professors i think is proof professor of 28 when i forgot it was very early and

and i said hmm he also gave me a boost my prof can learn something from me

i better pass my tail you know get going

so i worked day and night you know i worked the night and those days was ibm 360 and late ibm preset did you work on those cards you're punching those cards and you remember you catch them

one wrong type and you start all over again and then you can't get chewed up yeah you're messed up you draw a line across i said male 1 old days today was so so good anyway so it was hard life i used to what you call the mid-yacht [__] a graveyard [__] yeah because that's where i get computer time free computer time that's right otherwise i couldn't get so i worked like midnight to what seven eight a.m in the morning props will come in because you know as a research assistant you and i are the bottom line right [Laughter] so i think those things taught me a lot because uh first of all working the computer something new then if i'm on my own so i did a lot of learning on my own learning a programming language on my own yep so so i've always been exposed to doing things on my own but of course i also had validation that was really successful at nothing being a water phd and so forth then you know i was successful right so i also had uh validation that i was doing good things and then my my past academia was not direct so in a way i'm very different usually you know usually in academia you do a phd and you a master's in us a phd year or oxford cambridge then you you come home you join us and this lecturer or whatever and then you move up the ranks that's right i was never saying i'm very interested in um this problem so i work for two companies three companies all together before i returned to academia

one was a a a i already called um star from mit that worked at space programs i was interested in space

american science and engineering it was developed technology to inspect uh radio technology styles

crazy and all those stuff you know draconian won the the nobel prize i don't even know him for starting quad class yeah so i was working in this lab the company said does the company still exist yeah it's in boston there right now using cambridge american science and engineering oh okay at the time of small american scientist it's a small company american scientist it's done in billerica that was you know i enjoy smoke company you know why i tell you why

i i had a boss and my boss boss was head of company that's very good you know you want a job you get it within a day i just applied next day oh you got a job yeah you want a race you're talking about hey i didn't actually deserve a resentment okay a month later your race came yeah yeah there's no there's no bureaucracy no bureaux i tell you it's so fun working with a a small company that's why i like you know really that's why that's why i like entrepreneurship i didn't give people a lot of space to move around to grow because you learn all the ropes you know i have to punch my con empty my trash can load my load my deck and you do everything yourself there's no cue i mean a min starts to support you you know what i mean the usual

support system in a huge camp then i say okay now i work in a small company i'll try what it means to work for a general electric at the time in the 70s it was one of the largest what top five 10 companies in the world not now but it still is still this big yeah generally i think it has several hundred thousand employees yeah so then i went to research lab is connected in new york what a difference now oh from a company with 50 people or whatever you call it to hundreds of thousands then i report to what you call a manager report the sector manager admin to the vice

president and there must be 10 or 20 hierarchies to the president before you hit the president yeah and they never saw the prince the most i saw the vice president yeah and that was because i did something wrong and he called me in and talked to me and gave me a pep talk and there was a 400 and i said i said was it now i know small coming works this way which i like only problem with small company is you know it was a little tiffy you know every day it depends on contracts coming in you you know how it works right and that becomes a more stable bureaucracy bureaucracy that's right so i said i think i'll try academia but what would be a small college and that's where ah brown is a pretty good college but it's a small one

so i went to brown so that's how i entered the brown is ivy league i believe it's a small college yeah but it's still ivy league it's not happening it's not easy to get in no no no no no so i didn't enough well enough in my research to get in so yeah so i going as associate professor while you were with the small company and the nge did you publish yes yes i published you actually could publish while you're in a big company yeah yeah i could probably make sure i could publish oh and that's why in some way it was not a very happy thing because they said you should spend more time in corporate not just publishable work but proprietary work they were not publishing so i did a few proprietary work yeah i guess i did more publishable work yeah yeah so it was not the best of situations you know so i said well

i better better go to um

and then both companies you can publish so so i better join academia and so i went to brown

so you see my life like yours you know you know you and i are very similar yeah you know everything you said i went to saic for five years what's saic i say a science applications international corporation it's a fortune 500 company and and uh even though i'm uh one of the vps but there are 400 vps oh wow you're in high level i was just a section leader but still because there's so many vps there's so much politics and so much you know the company has 60 000 people yeah and twenty five thousand twenty five thousand phds that has no products except brains except what brings brains they sell brains yeah so they they're basically a dod uh uh outfit defense yeah okay okay okay yeah so so see you and i are very similar i mean you know everything you said where i don't know why we never met before so i wish you had met in the us and we were really great buddies and share experiences so so so and then you went to university after that right

so so so so i went to you and i entered a poly because you're not the most diligent students i suppose maybe you were but i was not the most i was not i can't guarantee you i was not i was the most diligent you know i like to play around and i always say that we probably met quite often eating the mutton uh indian mutton soup right off campus yes yes without knowing you know without knowing that you know they call it what there's a name for it the gambi yeah yeah yeah yeah just off the road outside the campus that's right that's right i know i know i i um you know and and we were at the same time but somehow we didn't cross anyway you're five days older than me exactly so so i think when the party the same time i'm pretty sure absolutely so

what we didn't mean because we're in different departments anyway so you see i went through a very different not the usual

well-traveled world you know right in every way i was different i went to academia to poly and then i didn't and then i mean i got my phd and then when i went to work i didn't go achieving directly i went again to work in a stand-up in a small startup which i like you know conglomerate you're right that must be 500 vice presidents i don't know how many vice presidents all i knew were they all about me i don't even see them that's right that's right and they all had their own plane some of them had their own planes you know while i drive my car to work drove my car to work

the highest leader was a section of research just what they call a group leader sorry yeah yeah whenever i went to brown so so i was so when i came to research i always had a different perspective you know and i want to ask you here brown is an ivy league top-notch university it's a high quality university yeah very high quality now until you went to brown you were in industry or you were a graduate student and as a graduate student you don't know much about a university except your thesis advisor and so on but at brown how long were you at brown 10 years 15 years 15 years right now after my ge days no no after after i spent eight nine years in the corporate sector you didn't have brown's experience would you be comfortable to be a president of nus oh i think not i think i can be hard i can be hard because i tell you why because the politics in the university is totally different different you see in university there's a lot of self there's a lot of ego and people are there by self selection i mean everyone thinks they're smart and literally everyone thinks they're smarter than the department heads you know president or whatever that's right okay that's right and so it's a totally different culture very different and a corporate culture yeah so i understood both yeah i also understood that the university should also have some accountability you see that's right faculty always talk about freedom freedom freedom but i think we forget that freedom also caused accountability and in some way that's what i'm missing in america i i don't know whether i'm sure you don't know this accountability almost has no chinese translation is that right that's right it's very i took me a long time asking lots of people finally someone told me a term that no one would know what it is and and so on so in other words the concept of accountability is very different in the chinese culture

it's profoundly different and that's one of the important things nowadays in china that accountability becomes important as kisho mahabani always say china somehow found a way to bring up accountability nowadays it's not germane in the chinese culture oh wow i did not know that but certainly it's a word that is absent from u.s vocabulary

you know it's happening to mine a lot of politicians in the u.s yeah yeah so

and um anyway so in some way i hope this is preparing how many graduate students had you produced at brown how many people more than a dozen many of them are well doing doing well that's pretty good professors i have some who are professors at uh at the northwestern uh uh in uh stony brook in uh uh somewhere not in london university imperial college they're all over spread over because they came from ireland you know the u.s is so interesting that something

so strong but i'm so sad about it yeah yeah we were students from all over the world that's right and i'm going to talk to you about the importance of the social cultural dimension of research education everything we do there's a social culture because we learn so much from other cultures i learn so much even from my irish students from my chinese students from my italian students from my american students the way they think the way you know it's so different the way the americans approach the problem and the chinese approach of prominent irishmen approach a problem or spanish yeah spanish totally different portuguese you know geez these guys are interesting you know because you know based on my nature i'm so observant of people i enjoy yep observing people you know you know you and i are explorers and explorers who like to know about people they're social beings

so so i learned experience and i didn't begin to understand the education research has a social cultural dimension right because for example to my advisor you know what i learned best we usually go in in the late afternoon coming back to say june fong you're working too hard let's go for a beer i have a square and over a beer we talked about and i said oh somebody struck me that's right and sometimes i go to my colleagues for lunch you know mm-hmm and on scrabble he wrote something hey this is a good idea because you really got to interact and exchange ideas right that's also missing in asian system the interaction the vigorous intellectual exchange honest exchange rate which by the way do you do you remember lee kuan yew said that in the long run china cannot compete with the u.s because china finds a talent from the 1.4 billion people us finds it from 6 billion people yeah that's that's what it is you know in a u.s university i hope that wouldn't change you walk down the corridor you see your colleague from argentina you see your colleague from south south africa from india from canada from australia you know all of them have different ways of thinking even on ways of ways and means of life yes and that's why when you talk to someone of a completely different culture you you get fired up you know you talk to another chinese it's hard to get fired up from from from this from this cultural point of view because we're all the same

culture is so important cultural diversity in university it's so important i emphasize i'll talk to you later about nus okay got it because i've learned so many things about social and also from different social strata right you don't really meeting all the rich guys you know what the pedigree to come for what pedigreed schools in new york i forget doesn't matter you know you need to meet people from the poor schools the rich girls and say you know this guy think differently why does he think that way so you need to cut across social strata you need to come across cultural structure and i think that's the rich experience education so so so that's why it's so right for university to admit people across all cultures in social strata i think that will be the best union that's why i hope nus will be anyway i'm sort of lost i attract all these discussions so now now now you're almost back to nus yeah after brown so so so what prepare for is all these experiences with me now i was in nus i was first why did you go back to nus i mean you could have been comfortable in brown for the rest of your life i tell you i took a big risk i was a ten year lifelong tenure right and um i had a good position had quite a bit of fun also a member of the national academy of engineering right i mean you got all the questions i was about to become so i knew i would become it's a matter of time because i was doing very well yeah so i was on

track to become and i was getting a lot of funding good students had the best students from china europe irish i mean yep publishing very well i was always publishing the top journals um

what made me go first of all a couple of things first of my parents were getting old my mother was getting sick

you know so you can always say i had a global mind but the heart is still home is still the heart or hard still at home

i think that's where your chinese comes in yeah the asian come in say family is important i i got to see my mother that's right she was getting ill what happened to your father he's gone already yeah he's gone also by now my mother was the first to go he was in hell

so in 1990 late i know i went to singapore a couple of times i was in a sabbatical day i knew the system

and also the singapore government felt

that i should return are the people in what you call the national science technology board who are in charge of technology innovation is is a two-prong thing so it was a family pool and then nationally they think that singapore is ready for

the knowledge innovation driven economy yep and i was certainly in a researcher in a fairly established position i also had corporate experience i told you i spent about nine years in the corporate world right uh two corporations and so so you know oh this guy had both he was in a corporate world he was in academic world he did well in both maybe you should have him back as a director of an institute that is involved in so-called research that can be transferred to innovation it's called this is the pre-run of a star you know a star right yup yup nstf was the pre-run of a star so i was one of i became a director of what called emory institute for material research and engineering yes so i was over took one position i want to see my mother so i said okay i returned but i didn't have all i had was a five-year contract

did you resign from brown i took a two-year leave and eventually resigned okay so i took a two-year leave and then i read so i read return in late 1996 or almost 1997. now in 1997 i had about two and a half positions i was immediate director i built a whole new immediate laboratory it means by the way it's a very established research that brought you the one of the best at a star i was a faculty member in engineering i was called deputy vice chancellor today you call deputy president you know you know one of direct reports of the vice doc vice chancellor right so i held three positions all right i'm 41 pay wow but singapore pays you well yeah i single pizza i wouldn't complain anyway

anyway so so i was there and i learned a lot because there was a i was running an institute where they were more or less the deliverables were more or less clear we got to develop research but research that are so-called the use of economically relevant or useful you know at

university that's a bad word you say well research is basic someone like cracked the frontier of science that's great so i'm going to balance that okay we do research a credit but some can do research to crack the frontier of science then bring new path but also create new technology that will be the best you know it's you have a you know two axis on your research one is fundamental research you know break new grounds another is technological impact so why not do both if you can but even if you do one or the other is okay but able to do both so these are things that begin to involve but in university you usually think of doing well in research and get your paper published so you see i was really talking two directions just as i was in the u.s i was in corporate world and academically so i was really tucked in both directions you see what i mean i've always been [Music]

so i was in the position for two years emory director and deputy vice chancellor and also faculty member and ultimately government say no you should be a full-time deputy vice chancellor because they made me like that

first dvc or exactly the vc or whatever something like a provost it's like yeah someone but they don't have a provost yeah they don't have a provost but that's what it is no i introduced a provost i started the program okay so i had more or less brought responsibility for university for about a year and then i became president so my transition years was over a two and a half year to three year period so i understood i understood university culture because i had brown experience of 15 years

i also had harvard experience which is satellite phone but then as a student graduate i brown as a faculty for 15 years i had nus for three seven eight nine ten three years or more as a deputy vice chancellor yeah two years as deputy vice chancellor which is like deputy president very high level deputy president and then and then and then i have worked with corporate singapore for about five years four or five years i worked corporate america first for nine years so i had the combination of both and that's when i became president

so i was struggling i was struggling

so you know someone said to me because you're multi-dimensional if someone fourier transformed youth they'll find all the components of you when you when you are 48 transformed yes all the components are there that's right you know nothing to you but if if you want to tear it up by 48 transform you will see all the components yeah you see all the spikes you know right

and it it was a struggle for me you know it creates conflicts let me ask you here an important question how did they pick you as the president did they go through a what a u.s university search process or not now those days

it was not a search i mean it was old days

it's basically an appointment by by the ministry of education minister our minister of university was dr tony tan he was deputy prime minister that's right but also he was a minister for

university education so there was a minister of education yeah and the minister for university education and he was obama right the minister education at the time was still cheathen yes who is now deputy prime minister yeah and then dr tan was the minister for university he he made but those days nus president all picked from nus from singapore right i mean was was starman the minister at the time who format yeah salman became my second minister um to minister of uh defense salman became the minister and and both were brilliant absolutely singapore always said the most brilliant ministers yep okay so anyway i was appointed by dr tan as the yep as um those are the days you don't apply for his job you're just given you're a man yeah and you can't you cannot even say no no no you can't say no and then i was embarrassed once he asked me i want to appoint his deputy advice and say no i've got to think about i'm going to check my wife the secretary was shocked the japanese promised you do something i i gotta check with my wife because the u.s response is my culture right my wife is very happy about it that's right that's right you're very gracious okay i'll give you a couple of days you come back to me he understood my u.s culture but there was a no-no in singapore anyway that's right so i was also culturally i was uh you know multicultural by now that's right don't mind i've say my heart is still asian still singapore

so you ask the question very interesting question

i was there was at the time in the late 90s and early 20s in alignment alignment the gum was very clear where they want the universe is to i mean dr tan said any university is going to be the engine of of economic development he says very good universities

all right are the engines of development and he meant by this is engines of knowledge and innovation and it's knowledge and innovation that will drive singapore you know up to the next level you know what i mean yep beyond just

low tech manufacturing to high tech so that must give my knowledge innovation yep it turns out that those are the things i worked with in in my corporate days in my ge i was very well established researcher he knew about that

because for some reason another they asked for my cv you know so i had my friends from the u.s who knew me well wrote for me and he was pleased so anyway so there was an alignment of um of of you know i mean simple division but you must know singapore well i mean many banks too

it has limited land resources singapore imports everything yeah right from soil to build houses

to reclaim land food at one point even most of water but i think now singapore may be water self-sufficient but that's right singapore's desalination is yeah almost no water from malaysia yeah everything food water okay so what do we have in abundance human resource that's what it has about i think lee kuan yew the leadership was very clear human resource especially human resource educated people who can bring singapore forward so they place education was always center in front i mean front and center of policy education front and center and it plays a

premium on university education but that's the way to grow the knowledge innovation driven economy

and that is how i think about university too in fact one of my students my impressive science i taught the university itself now i didn't know his thinking it's more than

the engine of knowledge create new knowledge but also to contribute to development business my corporate influence right the research can be fundamental but can be innovative too so there was a i think in some way the government is going the right direction and i was from some of the speeches i made when i came to singapore clear that that's the direction of my thinking wasn't what you know i said doesn't mean i was institute directly i made some speeches so anyway

so so in my first speech at nus so i must say that the government's very supportive of the universities you know what i call in my inaugural speech on june 1st i'll be happy to send to you june 1st 2000 i said the vision of nus was towards a global knowledge enterprise i then said i said i didn't see knowledge i said global knowledge enterprise now what do i mean and i fill it in i see the vision the vision of a growing launch enterprise is multifaceted it's it's about

the pursuit of excellence excellence in in fact that i i amplify excellence in research education innovation and enterprise with many building of universes research and education i said for singapore the university that's not enough that's not enough not enough yeah has a national service innovation and enterprise so i added both and this was very new i don't think even you and us universities talk about that but this came from my corporate experience as i said i feel there's no really nothing incompatible i said if you want to do pure research it's fine i will not but if your research tends to be innovative it can translate to technology why not why not right so so and then i said our students have been more entrepreneurial entrepreneurs in the sense of making my entrepreneur means to be thinking out of boxes to try new things that's what we think of we don't think i'm trying just the bill gates and the steve bezo or the elon i mean to entrepreneur it just means to think think things in a different way so so so i unleash a video and then i say the university must be a place that not only me we pursue excellence in these areas of educate of research and you can sorry research education innovative enterprise but we have to build synergies in this forest synergies among the four areas so how do we do it so this was my first speech how do we do it how do we how do we realize this vision how do we realize this vision now this is so something first you said global the reason is even knowledge is only good at the local level

in asia internet is not good if you want your knowledge to penetrate the world it has to be invested by global standards right it has to make a global impact and education also has to be global in the sense that our students must be recruitable employable in singapore and the world and then the world will come to us if our students are only good for low level jobs the mncs will not come so global standards are very important to make an impact globally so that's why the global is so important so so what i added was the global and the enterprise knowledge is always clear university is always about knowledge but the global means vehicles stand out globally and enterprise means we got to make a difference all right not just knowledge but the contribution to

society to the country which you know which is the host or which supported in the u.s so this one might think how do we do that now that is a thing you have a vision

let me ask you a question let me ask you a very uh uh a question here where do people like stephen hawking play into your vision

stephen hawking to me was a great man i read this about what the three minutes or what i forgot seven minutes oh yeah yeah three minutes three minutes three minutes yeah yeah

he was i mean he was looking at at the world right the cosmology and cosmology and the world he belonged to me what we call the the the superstar know you can think long range in the future and he talked a lot about things he even talked about ai and a lot of things that's right great admiration for him right and i think he's the epitome of the great scientists okay and i hope engineers can produce someone like that but at the same time i also hope engineers can please people like uh i'm from a french guy who discovered a lot of diseases and and his unique name after him the the french i can't remember you know like uh salt and uh uh what you call jonah salt and people like that who also made contributions so we need two types yeah we need the stephen hawking the albert einstein and many of the ideas like his thing about lightness photons right yep today that's the backbone of semiconductors right photons but back in what 1905 i think so what's the use of photons [Laughter] you know so general relativity you know how useful for satellites you know navigation so those are very important but they may be far away but we should keep doing but we also need to do things that fight the environment we got our environmental crisis we can wait a hundred years well

i think this is what needs what you have articulated which very few people articulate now is that creativity really is at all levels at all levels is it all now it doesn't mean that the whole university can be stephen hawking because no one can be that smart anyway no no einstein anyway that's right radiation but you need all of them and some creativity can lead more and to technology whole mass of students to be able to interact with this this big fourier components of ideas that's right you yolk higher you have the stephen hawkins you have the great i'm sure what he said is true about black holes and all of this and they're proven to be true and albert einstein's relativity certainly ideas are now working today but then there are other levels that's right we'll find more immediate applications people can environment greenhouse gas and we know levels so we can't say one is better than the other you know i just need all this because my couple tells me we need all you know so so that's why innovation enterprise is closer to you know downstream yeah more immediacy we also need to solve immediate problems absolutely you cannot put a note in there and say oh i'm only interested in year 1000 years from now i mean you know settling on mars or or whatever you know meanwhile we may go okay so so you know so how do we achieve this vision no you're right it's created many levels and you and i know because of the ways you uh you know i see people succeeded going you know the the straight path and you and i succeed through a tortuous path but we also succeed reaching the the peak by a more tortuous part of round about yeah right okay so the many paths to excellence many paths to impact not one now the question how now that's come to what we call tenure and all those things so let me think about that

first of all if you want to promote a culture of excellence a culture of excellence a culture that celebrates excellence i mean excellence in the more broader sense i just described right not just the excellence albert einstein okay or stephen hawkins i hope we are on board right on the same page absolutely okay we want to create a culture of excellence

at I levels in research education and innovation enterprise a culture and the culture is a celebrated exchange where do we start so we have to start with global best practices because we have what does the world does what does the best universities does so the first thing is kenya kenya now back in the 90s when i was there or it was a late night you were busy thinking about tenure already professor olympian and the three dbc's because i had the most u.s experience we think about tenure you see if we want to recruit create this culture excellence we gotta bring in people who are immersed in the culture you cannot take a no i don't wanna use one i'm very careful even i experience the culture access you know i mean i went to u.s university even though i was a part of token pool i could join the faculty coffee room have tea and coffee and cookies and see how those by the way one book was there you know it's harvard yes that's right i think it was julian swinger was there i didn't think the two guys got along very well whatever i'm not sure it got along well yeah i used to join in because we had a know probably i was quite open and you joined the division you can go around yeah yeah and i see them talking to chalkboard over coffee you know everybody it was a very open engagement you know that's right sharing of views nobody really worry about sharing views and they would always give credit if you gave me an idea and it helped my work i would acknowledge it in my paper it was very open culture culture sharing exchanging ideas and we were part of it let's see so that's a good practice but how but this was so much confidence how did they get that so we got to recruit people who understood the culture of scholarship of engagement of openness you know and i said look at the time nus only gave employment to 55. so if you joined nus at the time up to the 90s you were given a contract and i think i suppose if you i don't have all the details you have to check with others but i think it's pretty correct i can always check back again and come back if you if there know if you just do your thing after about four six years the the department head will have a chat with dean the dean will have a chat with the vice chancellor and then say okay you're a nominee a senior lecturer or an associate prof or prof i don't suppose there's only one or two props in per department

and then you're more or less on the payroll for good till about 55 but there's no such thing as 10 year track that's right looking at tenure that's right there's no rigorous interview of scholarship it's just the discussion between among the head dean and vice chancellor and of course as yep and we were also involved i was involved for a couple of years i never felt very happy about it i couldn't say too much because i'm part of team right i'm just but i knew my mind what should be done i mean could be done better i did suggest a couple of things and so did cheetah then but

she thought i was usa i was here si hang was pretty so anyway that was a british system too i think right you you join a couple years then you just move up the ranks that's right but the marketing system was different and i have seen it was steven american system for 30 years okay i was in america for 30 years america so all right

so i said how do we promote 10 year trek so we had to come with 10 year track system the reason is if you want tenure you must create a tenure track system by 10 track system means let me come to tenure first how to be assist faculty members those days who could simply go up to the thing without external review without review a scholarship

and receive so-called uh contract to 55 or open point to 55. it was only 55 by the way but we should have retired and accept a rigorous

assessment of scholarship by international peers how we do it of course the fact that we do it the vice chance of me cannot do it we don't know our fee we only know our fields so we need to involve the departments how would the department evolve so all these things will build up step by step and the departments are very uneven some departments stronger and more weaker so so things were very rough in the beginning but how do you persuade faculty well i had one sweetener one you know why the contract was to 55 yep i said if you get tenure you get 65. that's right 10 more years ooh that's good but if you get that you have to go to this the process say ah okay no free lunch no free lunch but so we offered two things you can stay on the regular track it will disturb you then 55 you go you go or you can move on the attenuate system prepare your case and go to a rigorous review in several years and you if you make it you get 55. now 65 you don't you still get your 55. so let me ask at 55 you go through a review no no no no no no you have to do it before 55. okay so all faculty members were had a contract to 55. but at 53 or 54 you will go through a review no no no your contra ends

okay okay then i introduced a tenure track system anyone can apply for tenure it's open system but then you have to go to external review okay okay and if you get it

five ten more years ten more years but you can apply for it any time of course i urge the earlier the better because the reason you don't want to take your chance at 54 but you can apply for attorney a couple of times and this can be self-initiated see in the past this thing was initiated by the department head yeah yeah i understand i understand so if you're confident you talk to your head and get the thing going

so so this is the u.s system it can be self-initiated so you have to be ready but i encourage people around my pros and i i mean this is a teamwork it's not just me the implementation has to come from the provost there's a lot of work a lot of details are given sweet details that's inside already right yeah anxiety spoke about it i think so they told me anyway

because interesting as my uh provost later on my first provost was cheated uh second one okay but most of the training system was formalized under georgetown's time okay that was hard as well but she does not serve me the first three years i think three or four years and then

georgetown served me towards most of my termite we really push that through push it through because you have to go to upper levels our board of trustees right by then you're already a corporate oh you're corporate we were compromised in 2002 i think right right so we go to but of course emily's totally aware of the emblem is alarmed and they would send word to the chairman and say oh i think this is dangerous for us to give people 65 because once you change them at 35 not much more you can do so the guy creating a crime or what yeah that's right that's a problem in the u.s now yeah so so be very careful so so i hope i got it right either we can review this again it's very important the regular contract to 55 which highly retire and to get the 65 they had to go for a scholarship review the research review is done by outsiders

no friends at nus and the service and education the three track you approve one three two three three pillars research education service and you get services reviewed by internally okay by our own people uh faculty members and so forth right so but the difficult one of course was the scholarship the research so we encourage you to do it students but once you're clear you can associate prof or full prof whatever it is and then and then you get tenure to 65.

so there was a sweetener because 55 has a very early age but people can jump in any time they can stay on the old track that was an old track and people come on the new track right so this was for the uh people in the nus system in the nus system right they have up to i suppose 50s to to apply but you want to do it at 54 but if you lose it you're gone yeah you'll do it a little earlier all right

so so people generally did it earlier and i think you can try a couple of times i think twice but maybe i can't want to get a glass of water you want to get yeah yeah i think a glass of water yeah so let me ask you suppose i'm a faculty at 40 years old and i think i'm smart and i'm doing extremely well can i initiate a tenure then right away no one will stop you you can even need your 20 35 okay and once i get it i go up to 65. yes ah okay i understand but but once you reach 55 that's the end you can't appeal anymore that's it yeah of course of course so you better do it earlier so this is why if i'm good i say i want to get it you know six years after my my assistant professorship i want to i want to be yeah yeah you must do it earlier i don't have to wait until 55 before i'd start to do that oh yeah yeah no no no you don't want to do it okay i can do it anytime in other words anytime you initiate it yeah yeah okay that builds self-confidence exactly it's self-initiated yeah yeah okay and i think you know come and think of it there's one difference between i find in my years in asia i think it's beginning to change and even among students there's a difference between western academics western students asian students and asian academics you know what that you just mean self-confidence yep yep westerners have a lot of self-confidence students whether they actually deserve it or not whether they deserve it or not yes that does immaterial they just gush your self-confidence okay sorry on the backs what did you say yeah on the question of confidence you know one thing i do have a question for professor trump von you know you did a lot of bold changes and uh singapore's not like china you have 100 universities you don't put all your eggs in one basket singapore only had a few and you are doing a historical transformation and a lot of things you said are risky there could be if you fail at doing them there are big downsides what gave you confidence in pursuing them do you have a methodology in trying all those risky things i i just find that curious it's hard to

phantom how much risk you have to take yeah you have to be very calibrated you do it step by step that's why i said member says that the faculties were uneven across the board for example our math department was very strong so we said okay math can go first and we learn from it a lot of things we learn from experience we do it right because it is we are one of two it was only nus and mtu and nus was the older university so so we and we we launched this so so so we were doing this step-by-step recalibrate so going to this uh new tenure system was a big risk and the provost is deeply involved we went to the board and then we have to go through how to implement this so if it's all in the implementation details how we implement this the pros had a full team while the leadership the university provided the policy we had to work with the uh board and so forth to put together policy and all that stuff the implementation fell on the provost's office so cheetah had a lot of implementation to do and he was very careful and i also worked with him a lot but whenever he put up something for for promotion i will also review it not just the pres as present i will also review it because we were very careful at the very beginning because a couple of missteps you know pacquiao would like to point you know that fella got to kenya i'm twice as good as he is i deserve 10 you know how this is right they always point to lower so i say if you're not careful will gravitate to the lowest common denominator that's what it always is they don't point to the best guy who got tense they always point to the weakest guy it's the weakest link they break the system it's always the weakest link to break the system so be very careful especially when in doubt let's hold it that's whole that's all let's do more to deliver in the clear-cut cases we go but in doubt we say no come back again because we give them several tries we don't limit the number of tries so that that's the safeguard but the other thing we did was with the tenure system which is best global practice

we also introduced recruitment tenure track positions hours when we recruit now we advertise and we're very careful that's right because i tell you why if we simply recruit say a lot of people and then more than 50 percent do not get tenure to be very demoralizing after spending six years that's right especially in singapore so so we had a very careful improvement so we now have put global best practices with recruitment promotion and retention that's how we protect our reputation because once you get a preparation exploiter or something that recruits a lot of people and eject you just throw them out throw them out

your reputation goes down the drain so so i think the tenure process global best practice in fact internally we often ask the reviewer

would this person be tenured in university do you think that's a peer university like a berkeley or you know illinois or michigan will this person receive tenure in your department that's a question we do ask you know

but at that time now of course you can say that but in the early 1900s where singapore is not quite at the level of berkeley and so on that question if you ask them do you trust the answer no no no no in those days we didn't ask them it was always later yes ah okay okay okay yeah no no i think i think we calibrated i don't think at the time we were ready two dollars that's right and 24.5 yes we start asking yeah i mean as i said our standards are moving up of course now i think you can yeah now we can now we ask it all the time yeah of course of course was it was it

a coincidence that when you said your mathematics department was the first one to try this tenure system and it happens that during the same time professor diane child was the head of the department like is there a coincidence that's too overwhelming i think he was the dean of department i believe and zhang jizan was a provost and so the math department had a very strong approval he was one was provost and was dean and so as i said departments were uneven so probably math was the first department to go through the tenure and then we learn from experience as i said you know you think someone says hey how do you cross a river each pebble at a time yeah that's right as the chinese would do that is in my brain all the time well i do have a vision i'm also a pragmatist

so you get the funding with your vision and the support with the vision when you actually do it you do it one step at a time oh yeah yeah you do you have to you have to i mean math i mean yes you can do too but we will learn from math and others and then you know the strong i mean you say across the board but you know people have no confidence they wouldn't dare to do it you know so the people who do it uh right that's right that's right i think what i'm saying is but please don't mention mathematics otherwise yeah no no no no no you should say you know there's some depends more ready for the system yeah i think yes yes for the kenya system because i don't agree now i get cues of uh so so this is the way it goes uh so chinese is so important kenya is really to me the primary pillar of excellence it really is because you run you want to and that's the culture now beyond that i want to say a few more things so we talk global best back then we have sort of recruitment and then we'll give opportunities for people once in the new group come in lieutenant track options to excel in research to pursue the scholarship and and then in time for tenure at the associate professor we don't look much as service it's more research and education by full profit we do look at service okay so anyway the order will be research education list two and then service for full profit but that's enough there's no looking at the faculty i think the other thing is we have to create i use the word enterprise remember i said it's just not just about research education it's also about innovative enterprise so in the time in 2000 or 2001 in discussion leadership we formally call nes enterprise and nus overseas colleges i know you've heard of any us yes yes that's a really a real success in fact it's something that all the other units in singapore are trying to model to varying degrees of success i think they're the most successful where are they where are these overseas colleges okay uh that's in silicon valley in new york in stockholm in europe uh in china and then later to some yeah there's all in toronto as well i think yeah yeah yeah north america north america has several uh europe has several china has several uh shanghai beijing i think maybe taiwan saint john indonesia and so forth and so first we went to uh to the world beyond singapore and now we also look in the region asia basically spend a year they work we bring them to entrepreneurial you know dynamic entrepreneur hotspots they work with a company for for a full year and in the full year they take classes entrepreneurship classes in uh with a university partners like stanford new york i think it's new york university toronto maybe university of toronto stockholm will be uh uh called kth and so forth

in shanghai futor anyway so so we work with partner universities and this exposure you see what i'm saying is a um

entrepreneurship you know has to be you have to you you have to go for it you know entropy production is not something you can learn from from from from from books you know that's right yeah you have to be immersed in

when our students come back i don't know how many i'm thinking startup we have more than 100 startups and some are very successful right you know some started in china very successful in indonesia and so forth so so so so so entrepreneurship is not something you learn uh it's really a um you know it's um it's something that you have to be exposed to another culture another another so i think it was good that bringing our students to the world of entrepreneurship towards the innovation hubs the innovation centers of the world and then when they bring back they share their culture we have an entrepreneurship house this one came later but they shared experience with other

aspiring students and i think this was also a major attraction for students to come to the us so so so we there was the movement you know i talked about research education enterprise and now i'll talk about education also now by the way i'm gonna say all these reforms doesn't happen with me i mean

you know for leader vision is one thing to share the vision get by is very important you know [Music] because without buying it will not work right because the execution has to come from a lot of people especially in a big and viewers and us so what we did found it was the university scholars program now at one time nus was very we really want to produce world-class education you know the british you know they're both specialized that's one even though in high school we very specialize already right ice cream science street yep whatever yep normal stream not so i don't know all those streams i

anyway the university also had departments but i said really in the new society new world as well internet economy and global economy our students will be exposed to different areas that's right absolutely you know of science engineering technology arts economics i mean even technology has a social impact like digital technology people may be talking on the phone or internet or whatever but the lack of face-to-face interaction can create big problems that's right so so there are these are all intertwined so i think uh an educated person of course has to be deep but also need to be exposed to i call it i call it the intellectual bandwidth yes intellectual bandwidth exact that's excellent india so i always call it that the intellectual bandwidth encompasses social cultural dimensions

the international bandwidth encompasses social cultural dimensions and therefore we created usp where students will come in from many faculties but those these students in fact they will study with the faculty they're coming from manufacturing and will take courses or so it's more like the liberal arts college but we can't vote a little bit because singapore was too institutionalized really so for that one about 200 students they could join us get credit for it and take classes in different areas you know critical thinking mathematics uh this and that social sciences writing and so forth we call the university scholars program and later we even launched residential colleges which is both living and learning and living together so basically to

broaden the intellectual bandwidth to include social cultural social cultural dimensions i think it's all very important for today's students so so so so so in that sense uh uh we are able to to to to to move forward as a great university scholarship high scholarship great researchers but education also the students also the quality has been raised right beyond specialization to abroad as a broader intellectual bandwidth uh and and then and then and then of course we built a university town i i think you have seen the university town yes remember that was launched during my time i laid the foundation stone and the breaking ground but it was not money from lee kuan yew for that right yeah i went to we went to liquin you for the money was a huge amount of money yeah i remember presenting the case to the cabinet and nikoi was in the cabinet so yeah it was in the early 2000s for utah was a very expensive endeavor so so so this built the university town where people from all the departments all the facts will come together for eating and social activities and stuff to create a social environment you know you know when you attend a university and you feel loyal to university it's not just the classroom yeah it's the social cultural experiences yeah it's the shared experiences in the food court in the sports field in the drama in the dance class that create affinity to your universe that's right right that's right because i enjoyed many things that have some registered music food with law students he did a lot of things and that created affinity so i know the importance of creating an affinity to the thing and you don't have to promote that so we never end us moving many dimensions you know both in by the way we have three more minutes before since we i asked for 90 minutes okay for this session i think we have a lot more to talk about uh let me ask you one question that we have how do you how important it is that nus whatever you said just now could be anywhere as a great university how important it is it is a asian university

i think it's important usa is an asian university because because it's in asia where this i mean the west has done well in asia university is still a relatively new development i think english has done so well and i confident english will continue to do well i think nes can be you know a model for asian universities everything it can be because you see while we have the global mind so far i think we still have a national character i think china always talk about you know having the national character i mean nus is still at heart a national university and asian university right i think that's important

i hope i said it right i don't want to be uh sound to nationalistic or whatever i don't mean to be there i think we've got to be global yep but we also have a home right that's right home give us identity we cannot say i like to think i'm a global citizen but i don't understand what global citizen means i think i have to be aware of the problems of the world but in my heart i there's a home that's right that's right the way is home because that's our identity that's right i think ideas will always be asian

singapore yep now here singapore is particularly interesting because it encompasses so many different dimension of culture you know you go to indonesia is primarily indonesian culture yeah and you go to thailand it's primarily thai culture but singapore you know it's chinese it's it's european it's indian it's you know the deputy prime minister is a brilliant indian guy yeah foreign minister and his wife is japanese and you know this they're all yeah this is singapore that is

totally different from asia singapore it's like a microcosm yeah it's really that's what makes singapore so interesting yeah and that's part of the reason for his success that's right because we're so open we accept so many cultures now the question how to have all cultures leaving harmony that's a tough balancing act absolutely yes that's the problem but we have many cultures yeah many languages yeah and yet i think singapore is a pretty harmonious society yep yep yep very local society i hope it keeps that way and you must have a large role to play to explain to younger people that's why these social cultural experiences mix with other ethnicity other groups and so forth it's so important it has to be integrated we cannot be put into chinese silo malay silo indian silo white silo whatever you know that'll be very wrong you know so so so i'm very happy about but the way that singapore it works out yeah and i'm sure nus will continue to do well i think nus you know our vision is not there yet you know it's this this pursuit of excellence it's a never-ending journey absolutely and you see everything you know the more you just talk about you go you go afterwards you go down right you need to come in and then you go down that's right well excellence is a is it's a nirvana you know you're never but you should always try to reach it yes it's an ending journey it's an unending journey that's right and i'm sure in us current president georgetown you know we don't understand it that's why leadership is so important staying the cause of excellence stay in the house you always adjust along the way you know you climb you don't have one path you climb a different path yeah you know the obstacle you circumvent and you move with gone that's right but that's the way it goes well leadership counts yeah leadership counts but team counts too deep well leadership is team yeah yeah it's a teamwork because a leader with a team yeah not going to get anywhere that's right that's right the general cannot charge and then look back and there's nobody behind him oh that's the end

that's right good good good analogy

well i i think we have taken enough of your time tonight um okay i think i'm sure i still have questions i will just send emails to you for for that discussion yeah you can send emails oh we can have another you know short uh zoom disclaimer yeah yeah yeah yeah i hope that you attribute the not so much your name to the team i i think it's important that be a very important case study for higher education in asia yeah it is an incredible case study and uh no one is is close to nus quality at the moment in terms of its you know multi-dimensional aspect yeah we are very we are very multi-dimensional we have many partners around the world you know as i said the job of nus is to bring our students to the world because singapore is a small is an island city state we have to bring our students to a world and bring the other universities to single cr so that you know this networking is so important it's not just to network among ourselves so we created a lot of during my time a lot of global partnerships with universities around the world yup no not just in research but in education to bring our students to the world i think today more than 50 students go abroad have overseas experience yeah i'm sure i'm sure that's very important so so it's really letting our students see the world it says you and i mean we saw a different world that changed our lives absolutely absolutely yep well thank you uh chen phong okay appreciate the time okay okay as i say things we can always discuss i'm sure i have you know in writing it i will have more and more uh questions that i need to ask yeah and by the way i will also show

the three of you what i write before i show anyone else yeah i think it's good okay and also can you send me a nice picture of yourself okay okay i forgot okay a nice looking one

okay right

kidding i'm kidding i i got a lot more grey hair now okay the same amount of gray hair you haven't actually it's very remarkable you don't have any gray hair well i am losing hair unfortunately but you don't have any green you're not losing hair you you're just turning it in gray can have both yeah yeah well you know i always tell people i i just find it so interesting that you and i have so much in common yeah you know it you know who else would in singapore if you're a good student you go to our eyes that's right oh you go to hua chung you know yeah yeah and then then after that you won and pre u2 and then and then bridge oxford and you know you know as in cambridge oxford or whatever and then you don't go i mean you and i go through yeah you and i went through torches path all the you know you know they go to ri and then nus and then whatever you know that's right that's right yeah i mean uh in chai is a perfect example you know and uh national universities no at that time it's called university of singapore yeah and then and then went to yale and then back to the us and move up you know his his life experience is is pretty one-dimensional in that sense it's also the same way i think he went to ri yeah and you asked i think he went to october came to one of the like one of the medical schools there and then came back yeah yeah so so you and you and i are two outliers so you know i just thought that a the three of you is so important in the development of nus you know it just happens in this two or twenty years i think we were there at the right time the government was ready

from singapore so i have a probably a deeper understanding of the three of you than most outsiders yeah and and so i felt that nus is such an interesting story for higher education that i would be remiss if i didn't put down and i the fact that i know the three of you i'm just lucky and i'm extremely lucky to know the three of you and so i i felt that i have an obligation to write this and i like to write yeah as you know i know you're a prolific writer

okay okay well hey hey say hello to lily okay so and hello to your family you know i never met your wife yeah we we need to get together someday what's your wife's name uh evelyn same name same name as chochan's wife oh same name okay good why did you bring evelyn to china or singapore well she goes quite often you know and she also comes to singapore she likes singapore food

yes i'm with bloomberg and actually i'll i work on like our annual conference that's actually in beijing it's called new economy forum that's uh have a lot of focus on energy which is something i know you've been interested in do you know absolutely energy do you know a person called hua he's like the special envoy for china for chinese government on the climate at un the guy who struck the deal at uh paris accord and he's uh working with us on this forum um actually this year we're going to singapore previous year i mean before covet or in beijing and this year we're going to singapore and right now we're working with the edb uh on like finalizing our schedules for november so singapore this year will be on the world stage for multiple reasons

the davos world economic forum is moving to singapore this year originally or may but they are pushed to august because you know it doesn't look like may is ready and we are looking at november so yeah it's going to be a lot of attention to singapore and hopefully i'll be able to come up there the world economic conference is in singapore now is it face-to-face or online or they hope is going to be face to face but uh let's see if there it's if it's going to happen if well initially they said they're going to do it in may but that's way too ambitious so it's not ready yet so they put they push it to august let's see if it's going to be ready by august if it's not i doubt they would push it again because next year they have their big thing in january in switzerland so they don't want to have two conferences too close together so it it'll be interesting to see yeah yeah well singapore is really

on the stage you know you know that that uh that conversation between santa mon the deputy prime minister of singapore the indian guy what's this

he has a chinese name he's indian he's seen yeah deputy prime minister i'm sure you know him i know him very well yeah that with that interview by this uh the british uh arrogant guy oh yeah yeah yeah yeah how he just put that guy down completely with this i know i know ah you know

he is unbelievable and i hope he can become the prime minister the next one oh yeah well singapore has to face that challenge across the bridge in a couple years i suppose yeah yeah yeah okay well again thank you so much thank you really good talking to you all right okay bye thank you bye