Text Dinner Speech

by

prof dr Theo A.J. Toonen
Emeritus Dean Professor of Institutional Governance and Public Administration

Ladies and Gentlemen,

You have undoubtedly been looking forward to a leisurely, quiet and relaxing social evening event, at the end of a daylong of hard intellectual work and – hopefully – intensive and fruitful presentations and discussions. So, Let me start with a brief translation so as to explain this brutal intervention:

'Dear Theo,

With respect to the dinner on Thursday…
Could we ask you as one of the founding fathers of the DeSIRE program to present a brief talk during – a break during – the dinner? For many of the people present DeSIRE was already a moving train where they jumped on, so it might be interesting for them to know how this program once came into being. And… of course to hear whether the direction taken is the one that you as initiators at the time envisaged? If this seems a good idea to you, we also wanted to ask Paulien Herder whether she could say a few words to this subject…'

So far the mail message I received several weeks ago from Stephanie and Tatiana.

I responded that if I could add anything to today's conference, I would be most happy to deliver an informal and personalized contribution. And, that to me it was obvious I could only do this jointly with Paulien. Unfortunately, Paulien herself had to respond almost immediately that she was already committed for this very evening. Tonight was also planned for the - in the Delft context illustrious if not notorious – Delft *Dean's Dinner*; her current position of *Dean of the Faculty of Applied Sciences* at this University, means - I know from experience - she better not miss out on that occasion; not without the risk of spreading or missing at least some of the latest Delft rumors.

So; here I am on my own. And I am also not sure whether Paulien would approve of everything I am going to say to the subject. But I am happy to take her minutes. I communicated and coordinated with her. I really had to, because for the both of us it took some digging into how for heaven's sake again things actually emerged over time, some 5 to 10 Years back. Because that is the time span we are talking about. For a joined evaluation of results achieved, it's is too early, I think. And I am not sure I myself have enough overview of the program yet to be able to make such an assessment. I therefore rather limit myself to a more factual account of the early development and its roots, be it - of course - an account from the rather limited and personal perspective of a Dean in function.

A Project like this is always the outcome of a process where 'many hands' are involved. So there will be many different and valid stories to be told on how and from what

backgrounds an initiative came about. I remember being involved in the drafting of one of the final versions for a proposal for funding to the 4 TU Board (which must have been somewhere in 2017), on the basis of the contributions from many. I seem to remember a session with Tatiana from Australia, and Marjolein, Tina, David and Bas present (and various others contributing from a distance) where I even personally came up with the by the 4TU Secretariat required acronym (DeSIRE) as a label for the program: Designing Systems for – or didn't I propose: *with?* – Informed Resilience Engineering.

But that is only a part of the story. By that time Paulien, for various respectable reasons, had already dropped out of the process in which she played such an important role. She'd moved on to another Faculty and large scale energy project in Delft (not yet TNW). But in the larger process, Paulien had already contributed much to the path development and the *de facto* foundation of the new 4 TU (Resilience) Institute – I think even before it formally came into existence.

Let me elaborate. But let me first briefly introduce myself. For those of you that do not know my background: after almost 20 years as Professor of Institutional Governance and Public Administration at the University of Leiden (and Rotterdam), of which the last 5 years as Dean of the Social Science Faculty in Leiden, I became Dean of the TPM Faculty (Technology, Policy, Management) here in Delft in 2008. After fulfilling almost two tenures as Dean of TPM here in Delft I was appointed Dean of the Faculty of BMS (Behavioral, Management and Social Science) at the University of Twente

in 2015; a position from which I retired in April this year. It is in the last years in Delft and the first few in Twente that emergent ideas of setting up and developing a *Centre for Resilience Engineering* started to take shape and form. The foundations, in my perspective, were laid down earlier.

The DeSIRE program since 2016 has become the foundational development program for the 4TU Resilience Centre, in those days still the 3 TU Strategic Alliance among the Technical Universities of Delft, Eindhoven and Twente. And of course, the addition of Wageningen to the traditional 3 technical universities opened opportunities and new perspectives. However, to identify the roots of the development, which - some 5 years ago - lead to the design, approval, funding and set up of the DeSIRE program and understand the development of this program I have to go back to over more than a decade ago.

Some time after my arrival in Delft, Paulien was appointed Full Professor of Energy Systems at TPM. Together we became active in CESUN, the at the time MIT based *Council for Engineering Systems Universities*, which we, at the time, both considered the natural international habitat for the TPM Faculty. After participating in some annual US meetings we organized a by all accounts very successful first international CESUN meeting in Delft in June 2012. Water governance and risk, safety and resilience where among of the various topics on the agenda.

We had since 2010 already gotten more and more involved – I became member of their advisory board - with a specific

CESUN member, that very much seemed to fit the TPM profile: Stevens Institute of Technology, home of the renowned inventor of the Scientific Management School in the 1920 and 30's: Frederick Taylor. Stevens Institute is located in Hoboken at the banks of the Hudson on the opposite – the Jersey side - of Manhattan. In October 2012 – indeed: last month this was precisely ten years ago – Hurricane Sandy struck New York City and the New Jersey Shore, Hoboken included. As a heavily affected waterside city Hoboken soon after Sandy was to be designated by the Rockefeller Foundation program as one of the worlds future '100 Resilient Cities'. This was at the time an intriguing concept for us, coming from a country worldwide renowned for its watersafety culture were risk-management, prevention and protection against - rather than the successful recovery from - flooding, historically seemed the established and undisputable norm. The Dutch approach seemed rooted more in 'prevention' than in – the need for – resilience.

In subsequent years – after 2012 - we gradually intensified relations and witnessed the ambitions and potential, but also the complexities to 'Rebuild by Design' as the program in the NYC region was called, where among others Henk Ovink - the later Dutch 'Water Envoy' and now ambassador of the 4TU Resilience Centre - and Dutch architects and engineering firms played an important role. There, in Hoboken, we first-handedly experienced the practical need, potential and the possibilities for an international or at least Transatlantic Dutch Centre for what we gradually started to identify as 'Resilience Engineering'. Like earlier on in 2005 with hurricane Catherina hitting New Orleans, Sandy had been

exposing all kinds of unexpected side-, after and domino-effects of a major Storm and Flooding Disaster that we had hardly thought of or anticipated in the Dutch context given its presumed high level of protection and its focus on risk management prevention The hands-on experiences with Catherina and Sandy as 'de facto field labs' made many look at the Dutch experience with different eyes. It eventually influenced and – I think - also changed the Dutch approach to water safety and urban resilience in various respects.

On the other hand: a program initiative based on the familiar pillars of the Dutch WB21- (Water Governance for the 21st Century) Policy approach to water- and coastal management - "Resist, Delay, Store and Discharge: a comprehensive Strategy for Hoboken" - of the Office of Metropolitan Architects (OMA; to some better known as 'the Firm of Rem Koolhaas') – had been rewarded as a winning project in the context of the New York and Rockefeller Foundation Rebuild by Design program. This signaled to us a clear international need and appreciation for knowledge and expertise about an historical Dutch practical and engineering experience and expertise par excellence.

In 2014 the follow up of the 2012 conference in Delft was held in Hoboken en New York City, with much attention for Dutch contemporary water- and risk management. We organized a session on *Coastal Resilience in Metropolitan regions* called: *Beyond Sandy – towards a Transatlantic Agenda for Engineering Systems Research*. The session was conducted with Michael Bruno, the then Dean of the School of Engineering of Stevens as my co-moderator.

Alex Washburn - the pivotal Rebuild by Design architect and advisor of the then NYC Mayor Michael Blumberg – was one of the presenters ('The Design for Resilience; the Urban Metro View'). He later visited Twente for some time as part of an effort to set up and further develop the transatlantic cooperation. By that time my move to Twente in 2015 had already materialized. But unfortunately our ally in the transatlantic ambition Michael Bruno shortly after the Hoboken Conference was lured away from Stevens by the University of Hawaii.

I can't blame him, but in retrospect this was a fatal blow to our ambitions in setting up the transatlantic Urban Resilience Centre. A blow that even the current president of the Erasmus University – then the outgoing Rector of Twente - during his half year sabbatical at Stevens could not counter.

Since I considered Hoboken a Delft project at the time, I'd asked Paulien to take over upon my move to Twente and to see whether she could perhaps find external funding for the ideas and notions developed in the collaboration and at the 2014 CESUN Symposium at Stevens. This for a joint operation among the 4 Technical Universities; at that moment the extension of 3TU to 4 TU was not formalized yet, but politically quite imminent. We had further developed some ideas – broader than water resilience only – together with Michael Bruno and been made aware by him of an International Call for Proposals by Lloyds Registrar Foundation in London, looking for proposals for what I think *they* called 'Resilience Engineering'. It is at least in this

process – lead from Delft by Paulien and Kenneth Heijns as her supporting project director – that the notion of *Resilience Engineering* had to be coined, also to differentiate our initiative from, for example, the scientifically and internationally well-established Stockholm Resilience Centre and comparable well-established international venues in the field of climate, environmental and earth sciences.

The Report of Paulien and Kenneth was called “Resilience in Critical Infrastructure’. It is still worthwhile reading (have a copy here). Their submitted proposal for setting up an international *Centre for Resilience Engineering* is dated March 2016. Paulien and Kenneth upon invitation even flew to London, to pitch the proposal to the Foundation’s selection committee. Shortly after, they got all the compliments but the Committee had still decided to select and support a proposal of ARUP – a British multinational professional services firm headquarted in London, providing design, engineering, architecture and business consultation across every aspect of the built environment - originally established as *ARUP Consulting Engineers*, which probably gives you an idea where Lloyds ultimate appreciation was vested in. ARUP, at the time, had recently started already to engage in various resilience initiatives like the development of an ‘Energy Resilience Framework’, a ‘Resilience Metrix’ and a ‘Resilience Assement Methododology’. Perhaps an indication for 4TU Resilience, where at least some of the potential international market partners are looking for.

The fact that we came out second was of course disappointing. There was Talk about a structural collaboration

between the two contenders, but ARUP soon opted for Oxford as their preferred academic partner. BREXIT was already casting its shadow. But you are not much of a Resilience Engineering Centre if you do not try and manage to develop the disappointment into an opportunity. Fact was that – even before the 4 TU Alliance was formally established - which happened later in 2016 – there *de facto* was now already the proposal to establish a 4 TU Resilience Engineering Centre. A proposal personally approved and signed by all 4 Presidents of the Dutch Technical Universities, with the signed commitment of 3.8 million pounds over 5 years if Lloyds Registrar was 'only' willing to grant 10 million pounds for the set up and development of the Centre over the next 5 years. But the real interesting point was of course: A 4TU Centre of Resilience Engineering was already established by Paulien and Kenneth. This even before the 4 TU alliance itself formally became a pact.

We never had to play that card. The fact that we had managed to come up with a broadly supported proposal from the 3 TU Institutions of Delft, Eindhoven and Twente, with a proposed Scientific Director from Wageningen (prof Rik Leemans was proposed), gave the initiative substantial goodwill, credibility and show of support. The seal of Lloyds Registrars positive evaluation was a sign of potential. At the later organized strategic 4 TU sessions in Wageningen - to celebrate, demarcate and support the foundation of the 4TU Alliance - gave me - as Dean of one of the participating institutions; now from Twente - room to pitch the Establishment of a 4 TU Centre of Resilience Engineering for my Colleagues of 4TU and the 4 TU Board itself; I proposed to

establish a ‘Virtual Research Centre’ along the lines of the already existing 4 TU Centre for Ethics of Technology of which I had the pleasure of having been the Chair during large part of my ‘Delft and early Twente Years’. The observation – now - that this 4TU Centre of Ethics and Technology in the meantime (2019) has managed to acquire an, all in all, 26 million Euro large NWO Gravity Grant (*‘NWO Zwaartekracht’*) - almost twice the amount asked in the Lloyds proposal - might show a direction in which the Boards of the founding Universities surely wouldn’t mind seeing also the 4 TU Resilience Centre evolve and develop.

But to sum it up: On a practical level the DeSIRE program - as well as the establishment of the 4TU Resilience Centre itself - has been born in the context of the process of Wageningen University joining the already existent 3 TU collaboration (est. 2007) in a strategic alliance at the national and – potentially – international level in 2016. The entry of Wageningen open new and innovative substantial perspectives for interuniversity cooperation in the field of Resilience; agriculture, forestry, food. Resilience in rural or - even better in a Delta Country - RURBAN (Rural Urban) regions. The ambition – some 6-7 years ago to broaden the alliance from 3 to 4 internationally renowned institutions of Academic Research and Higher Education in the Dutch context, provided the ‘Window of Opportunity’ to put and push forward an innovation and consolidation in research and teaching of which we had become convinced that it opened - internationally and potentially on a global scale – new and urgently needed perspectives for research and teaching, particularly in and from the Dutch context.

This is perhaps risky to say now, but at the outset there was not so much a big vision or big idea behind it all, other than the pertinence and urgency of the events mentioned before. I think, rather, we became and were motivated with the hope to develop such a new vision over time, in the process generating more attention for systemic rather than the more usual attention at Technical Universities for the operational and managerial policy-issues in crucial domains of human development. All this on the basis of grounded research and societal commitment, related to and inspired by the practical experience of disruptive and not seldom large scale real life events. Thus addressing 'real life problems' that we felt needed to be addressed because they were becoming urgent from a practical and societal point of view. We even discussed the Groningen case a few times as something that might be included. The newly (re)formed 4TU alliance opened opportunities to jointly and at an international level address the "Grand Societal and Grand Engineering Challenges' which since the end of the 2010's under the auspices of the EU and United nations had really started to make their first imprints as vehicles for policy and research thinking, planning and programming, an deserve to be taken seriously. By 2015 this had developed in a well established framework of Sustainable Development Goals (SDG's) that could constitute a 'challenge based-approach' to the 4 TU cooperation.

The term Resilience was elusive, attractive and broad enough to bring together a broad strand of research and research questions in an interdisciplinary way. There was still a lot of

discussion about the meaning of resilience – which I will not repeat here – but the broad meaning at the time also had its advantages in trying to connect different fields domains and levels of research: mathematical, technical, ethical, social, behavioral, governing and organizational, all readily at hand within the 4 TU Consortium as a whole.

My pitches for the colleagues at the 4TU foundational meetings in Wageningen (in preparing this talk I found my notes) were still about explaining what resilience meant and did not mean and why it would become important, particular for a consortium of 'engineering universities'. Where it differed from risk management or robustness. We are now beyond that, I hope, although many analytical and conceptual issues and demarcations still are at play. But from an Age of New Management and Efficiency and an Age of Policy Networks and Governance we, by now, seem to have entered an Age of System Dynamics and Adaptive Resilience. Particularly after Corona the concept of Resilience seems to have become a household name and is not nearly limited anymore to a primary association with energy systems, smart grids, supply chains or natural disasters and climate change; it has extended itself into psychology and political sociology. The quest for resilience, these days, is manifesting itself even in politics, in relation to the 'undermining and quest for democracy' itself.

In this context the *Engineering* component seems still important here for a 4 TU Centre. It was meant to differentiate and set the institution apart from other initiatives in an increasingly crowded field. In our thinking

Engineering was (and is) not so much to be represented and experienced as a set of technical and highly mathematical skills and competences. Engineering is an attitude. An attitude to tackle and try to solve real life problems - as well as constructed ones - on the basis of practical experience, experimentation, art, craft and learning from doing on the basis of a solid knowledge, testified experience and grounded understanding. That, to me, still seems a solid mission for the 4TU Resilience Centre of Resilience to continue its good work, and take the concerns, values, ambition and commitment which are reflected by its past development described in this *'Petite Histoire'*, into the future.

Thank you for your attention