Normally when I stand here and I look at the first row, I see special guests: ministers, political leaders, captains of Industry, eminent scientists, astronauts, but never before have we had such a distinguished visitor from the public sector: the president of the European Commission.

It is therefore a special privilege to welcome you, mr Barroso. We are extremely grateful that you have found the time to celebrate our Foundation day with us and to address us this afternoon. We know that your own professional career has moved between academic and political life, and today’s program features contributions from both worlds, so I hope you, and all of us will enjoy this special afternoon.

Protocol requires me to individually welcome our other distinguished guests as well. Although I would love to do that, in view of the short time available and the many distinguished guests present here, I extend a warm welcome to you collectively. And last but not least, I also welcome all our other visitors, as well as our own professors, students and staff who have come along this afternoon.

Now, let me make best use of my time by putting the various parts of this afternoon’s program in context. In doing so, I will try to deliver three messages in the next 9 minutes!

First: you saw the short animation at the start. It was focused on Lisbon and Delft: What do these places have in common?

Well, there is one obvious first link: it’s Mr Barroso’s hometown, he was born and raised there, beginning a distinguished career, to become PM of Portugal.
That brings me to the second and most important link. “Lisbon” nowadays is synonymous with the Lisbon agenda, the vision of Europe, devised by its heads of Government some 5 years ago.

This vision is: that Europe will become by 2010 the most competitive and dynamic knowledge based economy in the world, capable of sustainable economic growth with more and better jobs and greater social cohesion.

An admirable and inspiring ambition! But now, 5 years later, we know that we will have to do our utmost to achieve the goals set.

We can actually wonder which economy Europe wants to beat. Is it still Japan or the USA? Or is it by now China or India? Which one do we think is a tougher nut to crack?

In the past 5 years, we have seen some progress towards this vision, but we are also witnessing the emergence of a number of gaps: between the economic and social agenda (France), between the economic and sustainable agenda (environmental issues) and between the sustainable and social agenda.

So, how can we realize our Lisbon dream? For instance, how can EU achieve long term economic growth and ensure sustainability at the same time?

This is not just a challenge to politicians and the private sector, it’s also a challenge to Universities.
The Research agenda of Universities should not only provide new knowledge which can be used for economical benefits, but should also provide solutions to bridge the gaps between the various agenda’s.

Now, here comes my first point.
Europe is aiming at becoming “the most competitive knowledge-based economy in the world”. That means that competitive knowledge is the foundation of Europe's future prosperity.

However, I cannot imagine any successful economy in the world in the coming decades which is not based on new knowledge.

How competitive can our knowledge be?

### Developing the European Agenda

1. Knowledge sharing versus knowledge competition
2. Fit for purpose rules; stimulate “can do”
3. Lisbon is very much about sustainability, not just economics

Allow me to make a small excursion:

Last fall, I attended the 100 year anniversary of the Fudan University in Shanghai, a happy occasion which I shared with more than 100 University Presidents from all over the world. And I can tell you that they were not there just for dinner!

Today, all the World’s most prestigious Universities are engaged with their counterparts in these fast growing regions of the world, both in sharing research- as well as education programs. Often, knowledge is developed together and many gifted graduate students are obtaining MSc degrees from Universities all over the world, to serve the rapidly expanding businesses in their home country.

Hence there is a constant transfer of most advanced knowledge taking place: that’s how knowledge systems work (and should work) in the present border-less, information world.

And another observation: the more successful manufacturing enterprises are, the more capacity will be built. In such a case, R&D capabilities will follow, first with emphasis on D, subsequently on R, resulting shifts in R&D capabilities. These are lessons from earlier examples in industry (shipbuilding, car manufacturing, consumer electronics) and we see it happening today.
So here is the question: Since basic knowledge is globally freely available, what more does it take to make Europe a successful knowledge driven, competitive economy and prevent R&D from moving elsewhere?

This brings me to my second point:

Again, if one visits the fast growing Regions of this earth, say every six months, one can just look in awe, what a “can-do” mentality can produce. Skylines change every six months!

The Shanghai region is not only leading economic development because of it’s labor-cost advantage, but also, to a large extent, because of it’s capability to grasp opportunities and to implement effectively.

An opportunity driven, pragmatic and entrepreneurial approach is a significant attribute of the economical success of these Regions.

Is there a lesson for our R&D as well? Of course there is! It is about organization.

Research becomes more and more sophisticated, requiring exceedingly expensive facilities, so for EU Universities to stay ahead of the game, there is an obvious need to join forces and create multiple partnerships: across the scientific domains, and between institutions, businesses and countries.

That's why our University is strongly in favor of the proposed EU. Institute of Technology.
That’s why, since 5 years, we work together in a League with four most respected Universities of Technology in Europe
That’s why we are forming a Federation of the three Tech U in NL.
Prof Fokkema will come back on this point.

As a consequence, more and more money is channeled to joint research programs, including European, resulting in more synergies and more critical mass, just what we want.

However, one wonders whether the resultant complex governance rules, and the elaborate qualification procedures for funding are suitable in the current, fast moving, competitive world. Scientists are required upfront to define what it is that they are going to invent, with whom, and when, how it will be applied, and then find themselves tied to review processes, timetables and milestones.

That is not the way curiosity driven research, which is at the root of all major inventions and subsequent applications, will blossom to its full potential.

I would make a plea to apply the lessons, we can learn from others (not just China, but also USA) about effective implementation in a “can do” culture, also to our own governance rules and funding procedures of large, multiparty, research programs.
In essence: we should have less rules and more trust in the scientists upfront, and hold them accountable later, post facto, particularly in case of curiosity driven research.

And here comes my third point:
So far I’ve dealt only with the question “how” to respond to the Lisbon challenge. But the more pressing question is “what” that response entails. Which brings me also to the theme of this afternoon.

The overarching problem facing the world and Europe, the issue where Universities must put their priorities, is: sustainability. I will resist the temptation to show you all available trend-analyses of critical environmental and resource parameters. I will limit myself to just very few of them.

Firstly, let us remind ourselves that the pressures we see developing in today’s and most certainly in tomorrow’s world are caused by two simultaneous effects:

- the continuing increase in the sheer number of world population (now 6 bln, and 9 bln 50 years from now, no matter what we do!)
- and the increased use per capita of earth’s resources;
If 9 billion people would live a European life style...

At least 6 Earths are needed

exceeds earth’s capacity by a factor 6 .......leading to ........

If 9 billion people would live a European life style...

Global issues:
- Resources
- Land
- Water
- Waste
- Emissions

problem area’s
To give you just two examples, this is causing.....
...and: climate change

well known global warming (..... leading to climate change, disappearing polar ice caps, significant sea level increase etc.)

Suffocating Europe....?

.....and the European continent already suffocating (red indicates substandard air quality)
And remember: this is before the further increase in world population of 50% which will dramatically further increase the pressures on world's resources, for example:
Ladies & Gentlemen

The question of sustainability is clearly an area where mankind faces enormous challenges.
The world needs several scientific breakthroughs and technological revolutions if it wishes to improve or even maintain current standards of living.
This is about more than rivalry between economic powers. Therefore, my third point is that Lisbon is about much more than economic growth. The Lisbon agenda is also a sustainability agenda. This important point, I think has been grossly undervalued in the discussions about economic growth.

So it is the “what” question which should dominate our thinking. This is about content. Where do we start? What should we focus on? Climate changes? Energy? Health? Water?

As an example of what can be achieved, Prof Pronk will present to you splendid examples of how successful research can bring some of the problems closer to solutions. So there is progress! The theme of biotechnology has not been randomly chosen. We have a story to tell!

Ladies and Gentlemen, What better place to be than at an University of Technology in these times, when the world inescapably needs major breakthroughs in almost every conceivable technical field, within a very short time horizon of the next 10 years. That is the challenge which is facing us all. That’s our challenge! The Delft University of Technology is ready to live up to it’s motto: Challenge the future).
Now I have the privilege of inviting the President of the European Commission, Mr Barroso to address you.

Thank you for your attention