“DEXIGN THE FUTURE: Innovation for Exponential Times”

ARNOLD WASSERMAN COMMENCEMENT ADDRESS
VIRGINIA COMMONWEALTH UNIVERSITY IN QATAR
2 MAY 2016

Good afternoon. مساء الخير

It is an honor to be invited to address you on this important day.

Today you artists and designers graduate into the future.

Do you think about the future? Of course you do.

But how do you think about the future?

Is the future tangible - or is it intangible ?

Is it a subject for rational deliberation? Or is it an imagined fantasy that forever recedes before us?

Is the future simply whatever happens to us next? Or is it something we deliberately create?

Can we Dexign the Future?

What I would like us to think about for the next few moments is how creative professionals like yourselves might think about the future.

What I have to say applies as much to art as it does to design. Both are technologies of creative innovation. I will take the liberty here of calling it all design.

My speech is also available online. There you can follow a number of links to what I will talk about here.

The future you are graduating into is an exponential future.
What that means is that everything is happening faster and at an accelerating rate.

For example, human knowledge is doubling every 12 months.
And that curve is accelerating.
An IBM researcher foresees that within a few years knowledge will be doubling every 12 hours as we build out the internet of things globally.

This acceleration of human knowledge implies that the primary skill of a knowledge worker like yourself is research, analysis and synthesis of the not-yet-known.

In the field of design, not long ago, getting a product from concept to introduction into the marketplace took 3, 5 or more years. Today it can take as little as 8 weeks.

There are a lot of youtube videos titled “Did You Know?” This one offers a lot of interesting examples of exponential change between now and year 2028.

What does it mean to be a creative innovator in exponential times?

To explore that question, my colleagues and I have developed a course at Carnegie Mellon University’s School of Design in the U.S.
The course is called “DEXIGN THE FUTURE: Innovation for Exponential Times”

In this course we integrate Strategic Future Thinking with Design Thinking.

If you want to see the syllabus and student projects you can do so on line.

Just Google DEXIGN THE FUTURE and Introduction to DEXIGN THE FUTURE.
Be sure to spell DEXIGN D-E-X-I-G-N.
The web sites will explain what the X means.

We are not talking here about predicting the future. Predictions of the future are almost always wrong. There will be too many uncertainties, intervening events and wild cards.

However you can cultivate what futurists call “strategic foresight,” which means identifying the forces already visible today that are likely to drive change into the future — and aligning your innovation with those forces.

For the remainder of this talk I want to propose some principles you might find useful to help navigate innovation into exponential futures.

Principle No. 1 is my definition of design:

1. “Design gives tangible form to a valuable idea.”

Let me give you an example of the tangible form of a valuable idea:
(hold up my iPad).

How many of you have a tablet computer? There are about a billion of these in use worldwide. That is certainly a valuable idea in economic terms.

In addition to economic value, this idea gave rise to the entire category of personal screen-based, graphical, mobile, networked portable computers to augment and extend human capacities —
Creating many more values — such as social, health, safety, communication, learning, travel, entertainment, and on and on,

Who do you think first had that original valuable idea ?

Was it Apple Corporation? Was it Steve Jobs?

Does anybody here know?

That valuable idea was originated in 1968 - 48 years ago - by Alan Kay, a young computer science doctoral student, at that time the same age as you, at Stanford University.

Alan had a habit of watching young children at play. He noticed that they loved playing with Etch-a-Sketch, a plastic pad you can draw and write on and then erase the image by shaking it — and repeat ad infinitum.

He thought: hmmm, this is how people ought to be able to use a computer — like an Etch-a-Sketch. They should be able to draw on it, write on it, create images on it and carry it around with them.

What seems so obvious today was at that moment an audacious leap of imagination.

Back in 1968, the only people able to use a computer were highly trained specialists writing in computer code, not ordinary people like you and me.

At that time there was no computer in the world powerful enough to do any of those things Alan was thinking about — nor any software to run it.

This iPad has way more computing power than all the computers used in 1969 by U.S. NASA (National Aeronautical and Space Agency) to put two astronauts on the moon. And those computers were the size of this room.

So how did Alan Kay leap from observing children enjoying a simple toy to imagine something utterly novel that could not even be built for another 40 years?

Alan asked a design question:
What might it mean if a computer were as easy, intuitive and fun to use as an etch-a-sketch?

And then he devised a design action.
He built a rough model of folded cardboard. It was a little bigger than this but not much.
It was the first crude form of Alan's idea.
He named it "Dynabook." He carried it around Stanford University under his arm.
People would say, Alan, what is that thing?

Alan would say: This is "Dynabook." And he would describe what you could do with it.

Alan was illustrating Principle no. 2 of Innovation for Exponential Times.
When he famously said:

2. "The best way to predict the future is to create it."

Alan Kay also stated a third principle of innovation.
He said

3. "If you don't fail at least 90 percent of the time, you're not aiming high enough."

And that is what people did next with Dynabook. They failed a lot working to give form to Alan's idea — This is a fourth principle often cited in Silicon Valley today as:

4. *"Fail Forward Fast."*

This means don't labor to perfect your embryonic idea. Rather, move through a succession of prototypes as rapidly as possible to find out what doesn't work and feed that learning forward to the next version and keep on iterating.

I'm sure you will recognize this process as a central tenet of Design Thinking

In the years following Alan's "Dynabook" idea, a great many people in many technology organizations worked to develop, manufacture and introduce a succession of tablet computers. Most of them failed in the marketplace — but each one provided invaluable learning for the next version.

What was missing in all the failures was what we would call the design stuff;
i.e. The Look and Feel, The Intuitive User Interface, The Seamless Human/Computer Interaction, The Experience Design; The Consistent Visual Language; The Friction-Free Navigation. :

It took 48 years for a successful design form to catch up with the valuable idea of the iPad.

And this thing is still not finished.

The essential form of this valuable idea is not just the external casing, no matter how beautiful and elegant. It is the software.
A software-driven, networked artifact with programmable intelligence is never finished. It is always being updated with new versions, new apps, new operating systems, widgets, connections, and so on.

In Silicon Valley this is a fifth principle called:

5. "Perpetual Beta."

Which means that a technological artifact is forever a succession of prototypes — and is, in effect, never finished, but always in a state of becoming its next version.

The mindset and the technologies of Perpetual Beta are central features of Innovation for Exponential Times.

And believe me, just about everything in your creative future is going to have some kind of networked, software-driven programmable intelligence.

So, how do we design for a smart, networked, exponential future where nothing is ever finished?

Here is a sixth principle of Innovation for Exponential Times. It comes from William Gibson, a famous science fiction writer. Gibson said:

6. “The future is already here. It’s just not very evenly distributed.”

What this means is that if you learn to deeply observe the world around us (as did Alan Kay) you can discern early signs and signals —visible today—of the forces —social, economic, technological, political and planetary forces — that are likely to drive change into the future.

And, like Alan Kay, you can learn to align valuable ideas with the trajectories of those forces of change.

In the online version of this speech you can browse the syllabus for our DEXIGN THE FUTURE and Introduction to DEXIGN THE FUTURE. courses to see examples of strategic foresight scenarios that show how to scan for early signs of forces that are likely to drive future change.

Here is an example of forces visible today that will drive change into the future:

Leaders in your Gulf States have strategic plans for the shift to post-oil economies — from natural resources to diversified, sustainable development based on human capital and knowledge creation.

In Qatar, a pillar of your National Vision Plan for year 2030 is to provide financial and non-financial support for small and medium size new enterprise startup, incubation, acceleration and growth.
New agencies will help kick-start entrepreneurship by providing the venture capital that has up to now been missing.

Your 2011–2016 National Development Strategy explicitly targets the creative industries sector in the cultural, entertainment, design and artistic services — that is you!

These are forces that will drive exponential change during your creative lifetimes — a great opportunity space for people skilled at Human-Centered Innovation for Exponential Times.

———————————————————————————————————-

At the beginning of this talk I asked the question:
Is the future simply whatever happens to us next?
Or is it something we deliberately create?

Can we Dexign the Future?

One answer is this seventh principle of Innovation for Exponential Times.
It was stated by Nobel Laureate Herbert A. Simon. A pioneer of the fields of computer science and artificial intelligence, Simon was also a pioneering theorist about design.
He said:

7. "Everyone designs who devises courses of action aimed at changing existing situations into preferred ones."

What about you? Are you going to …
… devise design actions aimed at changing existing situations into preferred ones ?

Leonardo de Vinci, the greatest designer in history, had something to say on the subject. I propose it to you as Principle No. 8 for Innovation for Exponential Times. He said this:

8. " It had long since come to my attention that people of consequence rarely sat back and waited for things to happen to them; they went out and happened to things."

What about you? Are you going to go out and happen to things?

That is not for me to say. It is for you to say.

TO SUMMARIZE:

Here are the 8 principles I propose you consider as you Dexign for an Exponential Future:

1. My definition that design gives tangible form to a valuable idea
2. Alan Kay's thought that the best way to predict the future is to create it. — and —
3. And Alan's further that that if you don't fail at least 90 percent of the time, you're not aiming high enough."
4. The Silicon Valley principles of Fail Forward Fast — and —
5. Perpetual Beta
6. William Gibson's idea that the future is already here; it is just not very evenly distributed.
7. Herb Simon's statement that designers devise courses of action to change existing situations into preferred ones.
8. Leonardo's observation that people of consequence don't sit back and wait for things to happen to them; they go out and happen to things.

IN CONCLUSION

We began by thinking about how design gives tangible form to valuable ideas.

To conclude, I am going to propose to you a design project. This project involves the most valuable ideas I know of that have not yet found their successful form.

We generations before you have taken some action on this project.

But for the most part we have failed to change the existing situations into preferred ones — failed to find successful forms for these most valuable of all ideas:

Global Peace
Food, Water & Natural Resource Security
Universal Health & Well-Being
Justice
Equity
Life-Long Learning
Creative Opportunity
and — Sustainable Prosperity
For 10 Billion People on the Resources of One Single Blue Planet.

Let's make the due date for this project around the year 2060, about 45 years from now, the peak years of your creative careers.

How well you succeed on this project will be evaluated by your peers — and by generations to come.

Will you give successful form to these valuable ideas?

Will you change these existing situations into preferred ones?

Will you go out and happen to an exponential future?

Well, let's not think about that anymore until tomorrow.

For today, let us celebrate the happy occasion of your graduation.

Thank you. شك