

MIT's Contract with Society

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We need to determine what value we must offer our students and the world, now and in the future, that is worth their considerable investment of time and money in us. It will turn out that this is not an obvious proposition: it is time dependent. I perceive that we are nearing a discontinuity where the old vision of our purpose will suddenly stop being appropriate so it will be necessary to adapt rapidly.

The Problems

Our current contract with society is based on a rather problematic coupling between apparent educational attainment and individual economic success. While this may have been appropriate in the past, it is tenuous basis for the future.

The end of geography.

We have participated in the development of a world with outstanding communication and transportation. We now can easily and cheaply talk to anyone anywhere in the world, and we will soon be able to have instantaneous high-resolution communication in all senses (visual and tactile as well as audio). Much of our fresh fruits and vegetables are imported from places as distant as Chile and Israel, and almost all of our manufactured goods are now imported from China. This trend will continue.

As a consequence of this enhanced communication and transportation we will find less need for geographic locality for almost any economic activity. Indeed, it is possible that the Internet and its successors will spell the end of the nation state as the principal organizational structure of society, in the same way that Gutenberg indirectly caused the end of feudalism.

Labor arbitrage is already taking a toll on employment in skilled jobs in countries such as the US, the UK, and Japan. At this time, a well-educated engineer in India costs 1/7th the price of a similarly educated engineer here. It is not at all clear that a localized university, however excellent, will have much of a place in a totally connected world. We already have students telling us that they do not want to major in engineering because they foresee a time when all engineering jobs are outsourced. Thus they want to be

educated in ways that are less limiting than training for a particular profession.

Even universities are at risk. There are now profit-making ventures starting up all over to offer educational services that will directly compete in our market. I have received numerous offers from "Video universities" to "star" for them. I don't like the smell of that competition -- I think that they have a chance of wiping out the traditional university, by providing excellent educational services at a fraction of the cost of attending a traditional university. The Internet and Web can be used to improve the distribution of these services, and to connect students with low-cost high-quality tutors (perhaps PhDs from India -- as Patrick Winston suggests).

The end of work.

There are even worse problems in the long run. As societies advance, the production of essential goods and services becomes an ever decreasing part of the economy. For example, in China, most of the population is involved in agriculture. In the USA less than 2% of the population is involved in agriculture. This is due to automation and efficient production technology.

I imagine a (not very distant) future world with full automation. All goods and services are ultimately produced by robotic mechanisms, which themselves are produced and maintained by robots. In such a world the only limiting resources are physical. There must be space and time to do things, and there must be energy. I understand that MIT has deeply invested in the energy and climate problem. In this argument I will assume that we will solve the "energy and climate crisis" by technological and social engineering. Indeed, we have 1370 Watts/m² coming from the Sun as an equilibrium limit. But I have bigger fish to fry!

Although there are social, economic, and political reasons why full automation may be delayed, it cannot be delayed indefinitely, because it is always to the advantage of someone to push it along.

In the completely automated society of the future the value of goods and services is zero, because the productivity per person is infinite. This changes the entire basis of civilization. Standard economic analysis, whether Marxist or Capitalist, are completely irrelevant.

In such a society no one needs to work. That is not to say

that no one will work, just that there is no need. In such a society the currently unpopular idea of welfare as a way of life must be the respected norm. It is hard to get from here to there, but it must happen, under the pressure of great social dislocation.

We have precedent for such a world. The ancient Roman citizens were wealthy, and everyone else was a slave. This is not so nice for the slaves, but life for the citizens was pretty good. Our slaves will be electromechanical, so I do not think we will feel badly about enslaving them. In such a world, the only real value (to the citizens) is culture, art, and entertainment, because citizens are not required to work to survive.

The Global Leisure Society

In summary, since automation raises per-capita productivity, and since that trend will continue indefinitely, I foresee that there will eventually be no need for people to work for a living. Indeed, I expect that the per-capita productivity will become infinite within one hundred years. We must discover how a geographically nonlocal society could be organized without requiring human labor, and how it could be arranged that people who did not have to work could have long, intellectually and emotionally satisfying lives.

In such a society there can be no coupling of educational attainment with economic success. But there is still an important value to education. A well educated person can entertain himself or herself more effectively (by thinking) than an uneducated person, who will need more externally supplied stimuli. Thus the real value of education is entertainment, not during the process, although that can be fun, but for life!

We, as an organization, must figure out how to ride this inevitable transition into the future. We are in a good position to do this and to help effect the transition, but we need to think big.