

Chapter 5

Rethinking development in the global information age

Manuel Castells

The topic of my lecture today came about when I was trying to rethink development on the basis of a number of empirical studies, interacting with different conceptions and different approaches to development. I try to cut across the distinction between theory and empirical research in society because I always have in mind what this means in terms of policy, politics and change. This is based, on the one hand, on some reflection informed by theoretical frameworks and, on the other, by observation, and making sure the observation modifies the theory. I do this because my principle is that when theory conflicts with observation, you don't throw away the observation: you throw away the theory. We did in fact 'throw away' a number of theories.

What I am going to present is not the surviving theories but the theoretical approaches and insights we reached after the process of filtering what we were thinking on the basis of observing.

We know that 'development' has multiple meanings. This is important: it's not just a terminological debate. Words matter. The world has been differentiating between 'developed' and 'underdeveloped' and 'developing' for a long time; and no one knows exactly what these terms mean anymore.

Sometimes countries, like Singapore, still argue that they should be considered developing because that would mean United Nations subsidies. In fact, these categories don't work, and

certainly don't work in a world in which everything is connected through networks which, as we know, both include and exclude. Everything is connected but much is disconnected. Therefore the 'developing' and 'underdeveloped' and 'developed' depends on where you are: in which neighbourhood, at which time and how and why. That is a completely different notion to the one that created this distinction between what used to be the 'developed', meaning the West, and 'underdeveloped', meaning the rest, the huge majority of the world, with Japan being the exception. People kept saying, 'They are developed, but they are not Western' until someone decided they are actually Western because they use technology. Frankly, intellectually and epistemologically speaking, all these categories have largely been dominated by Eurocentrism and colonialism, justifying domination through the notions of civilised and uncivilised, and so on.

Consequently, we decided to cut through this to see what is actually happening in the world. My analysis here will try to go beyond the usual approaches, which are either descriptive (these are the processes of development), analytical (how this can be understood), normative (that which development should be), or apparently technical (which in fact says, 'No, no, no, we're not doing philosophy or ideology here; we are just technical: economic growth or social development'). In fact, values – fundamental values – are all included in the measures of calculation: they are embedded. Thus the way we calculate already conveys a certain number of values and assumptions.

To start with, I provide my own definition of development, which I posit as ideologically free in the sense that it can be filled in with different ideologies, and therefore it is not my ideology: you all can insert your ideology and it works. It is also open-ended in terms of content. I define development as the self-defined process – self is important – by which humans, as a collective, enhance their well-being by creating the structural conditions for the expanded reproduction of the process of development itself, so enhancing their well-being and, at the same time, creating the structural conditions for this process to go on.

However, the values that inform such development goals – the Millennium Development Goals, for instance – can be very different. For instance, for some, economic growth and accumulation of material wealth as measured by GDP is the critical thing: Let's simplify life; this is development, and then the rest will follow. What was ultimately implied, when it was not blatantly ideological, were Western values; and these so-called Western values were Anglo-Saxon and northern European, and would certainly not include Italy, Spain or Portugal. So, for some, this is enough: measure development as GDP. But we know that GDP is a completely arbitrary measure that was, historically, a provisional statistical measure that Simon Kuznets developed in 1938 in the United States simply to measure how the economy was doing during the Depression. It was a Prohibition artefact, abandoned later on for more sophisticated measures. But people say, 'We have one way to measure everything all together', without considering the price, the floatation of prices or other forms of value. Since then, GDP has become a political 'god' in the world. Any problem you have, you increase the GDP, then you are okay and the rest is subjective. But is the GDP objective? No. GDP is a statistical measure that is historically situated, which has been refined and reformed many, many times to the point that we now don't know exactly what the definition of GDP is, or on which calculations it is based.

For instance, we were talking earlier with a group of African development scholars about the notion that last year Nigeria suddenly became the largest economy in Africa, overtaking South Africa, because new calculations came out. New calculations from where, by whom and under which conditions? I am sure that there are all kinds of statistical warfare going on about this in terms of national pride, without measuring how much personal, human and ecological disaster is involved in this notion of overtaking South Africa with a new measure of GDP.

For others, human well-being is development. But what is human well-being? This point normally starts the discussion. For yet others, you cannot talk about development without sustainability.

But then, what is sustainability? One counter-argument is, ‘Do birds or animals have more rights than poor people, who actually have to eat?’ What are the different dimensions of sustainability? Again, it is subjective: it is when people consider, as I do, that the conservation of the liveability of the species on the planet is a fundamental value – more important than economic growth – that sustainable development becomes the most important aspect of development. (By the way, I always say the liveability of the ‘human species’, not the ‘planet’. We are not saving the planet. The planet will be okay without us. It will in fact be much better without us. What we are defending is ourselves *on* the planet, not the actual planet.)

Others directly express the values behind the goals of development, and they just say ‘development’. Amartya Sen and others focus on human dignity. Development is human dignity: dignity is development.

I will try to cover each one of these categories and assumptions. My purpose being analytical, I will propose a typology of meanings of development that, together, could shed some light on strategies and policies to improve the well-being of humans and their relationship to our environment, which is the only thing that ultimately really matters.

Let’s take economic growth defined, as we said, as GDP. There is a whole history of more refined calculations of GDP: more refined but more difficult because when you start including the issue of productivity and how to measure it, and the issue of value, then how do you start measuring services, and what kind of services do you measure, under what conditions? Do we include the value that global financial markets assign to companies and to production in the value that we create? These values assigned by global financial markets are actually very important because the value of a company depends on that financial valuation. But this financial valuation depends, as Paul Volcker has repeatedly pointed out, on perception. It is not that there is reality and then the perception: perception is the reality.

So, how do we include financial valuation in the calculation

of GDP? This has a very concrete impact on the amount of wealth that the society generates. For instance, in the financial crisis of 2008, two thirds of the wealth in the world was wiped out; it disappeared. How did it disappear? It disappeared from the financial calculations. But at the same time, the financial calculations were determining the way the economy was performing. So, if you have a company and suddenly you are completely devalued and you cannot borrow against the value of the company, then that is a very real effect. But what happens to the GDP depends on perception, and on the calculation of the GDP. In other words, what appears to be a direct, no-problem approach to defining development – for example, let's just measure material wealth – becomes problematic the moment you actually start doing it, when all kinds of methodological, theoretical and statistical calculations arise as problems.

At one point, some well-intentioned United Nations experts started to say, 'Well, GDP does not really measure a number of other dimensions, such as quality of life, an area that depends on basically public goods like health, education, subsistence services, urban infrastructure, etc.' All these aspects were conceptualised as human development. The Human Development Index was basically constructed to include all these public goods and the provision of these public goods. People then even said, 'Well, why don't we do something even more sophisticated that includes the actual happiness of people, not just their well-being?' Bhutan created the Gross National Happiness Index in 1972. Well, why not? If it is human development, what about human happiness? Is that development or not development? And it sounds terrific, except how is it actually calculated? The Bhutan Happiness Index is actually a survey that asks people everywhere in the country how they feel. Thus it is not too different from public opinion polls on the relationship of poverty to government policies. And then along the way, they added a few other things. I like this idea that you have to measure something else.

The fact remains, however, that the fundamental approach to human development in terms of the Northern development

approach depends on measurability. Everything that we can measure in terms of economic growth is regarded as development; and then that which we cannot measure, but which is still important – like education – is human development.

The key element in my perspective is that the terms define some relationship between economic growth and human development, particularly under the conditions in which the economic growth is largely dependent on productivity growth generated by a much more productive aggregate production function (I will come back to this later). This means not only the capacity to introduce information and knowledge into production, but also the capacity to operate a much more effective feedback loop between economic growth and human development. The notion that we are in an information and knowledge economy can be absolutely misleading. Not because information and knowledge are not important: they have always been important. There has been no economy and no society in the world in which wealth and power don't depend on information and knowledge. They have always been absolutely critical factors for wealth generation and power generation. What has changed is something called the information and communication technology (ICT) revolution, meaning microelectronics-based ICTs, with all their consequences: the ability to create organisational forms; the infrastructure and the rapidity of processing information, transforming it into knowledge; and using these transformations into knowledge to make actual changes in the production system. That is the difference.

How one actually processes better information is not just about technology. Technology is what affords the possibility of this type of effective processing. The important thing is that the human mind – where the knowledge is embodied – has to be capable of managing this capacity to process information, generate knowledge and implement it in different dimensions of human activity. Ultimately, all of these goals influence the ability of society not just to generate technology for social productivity, but to generate what people call human capital. I don't like the

term but let's say it refers to human subjects able to further their understanding and their adaptation of information and knowledge in every domain of human activity. This is ultimately about the quality of human labour in the broadest sense: not only the worker but the entire society. This certainly entails education, but all kinds of education, not just higher education, because if we have people in higher education who are uneducated at the primary and secondary level, we don't really have education. And it isn't just about education but also health, because if we are completely neurotic and sick, we will not be able to process anything even if we are highly educated. Thus higher education requires health: not personal health with your doctor; it is also about the environment. We have epidemics regardless of how good your health is in your individual existence. The issue is how this impacts the overall quality of humans as producers and creators of everything.

However, this is not just about the actual embodiment in human labour of the ability to generate and produce. It is also about the social conditions and the conditions of stability. We use all of this to generate endless wars and terrors between us. The intelligence and the information that we have embodied in our capacity to create becomes at the same time a capacity to destroy. The moment you say that information development is at the source of enhanced productivity, and enhanced productivity comes from the interaction and the feedback loop between actual material production and the conditions of existence that become a key element in the productivity of this material production, the moment you say that, you have to start including all kinds of elements which have a synergistic relationship between material production and the conditions of material production, which are, at the same time, the well-being of society. This is what I call informational development.

This particular connection and this model of information development is the most effective model for generating productivity and competitiveness. This is something that I developed years ago and that we tried to test. It was originally based on my empirical

analysis of two very different contexts in South East Asia, which was really about this feedback loop between the public sector that was providing good quality labour and stability, and then an economic sector that was extremely competitive at the global level. My book on the comparative development of Hong Kong and Singapore and my work on Finland, captured in the book I did with Pekka Himanen, entitled *The Information Society and the Welfare State: The Finnish Model*, shows exactly this synergistic relationship.

Then there is a fourth dimension of development: sustainable development, which includes the capacity to make both economic growth and human development compatible with the conservation of the liveability of humans in our only home, planet Earth, at the micro and macro levels.

And then, finally, there is another dimension of development, which is the holistic concept of development. This concept is normative. It says what we consider desirable in terms of values – such as human rights, animal rights, equality, gender, empowerment and gender equality, solidarity and the ability to live in a multicultural world through the reciprocal enrichment of diverse identities without cancelling any of them out – but at the same time moves beyond the exclusive dynamics of identities. Peace and democracy: these are encompassed by this idea of human dignity that includes and presupposes all the other business of development. It actually isn't a different concept: it presupposes all the rest. It's not descriptive and it's not analytical: it's normative. In that sense, it means that development must increase the quality of life, must be sustainable and must not sacrifice human dignity: in fact, economic growth should actually support and make possible human dignity. That is the way the different elements are interconnected.

I will try to look carefully at each one of these key elements and their interactions to see what the conditions are for these processes of development or the possible synergistic relationship between them. I will end by looking in some detail at what for me is the absolutely key element in the whole discussion: the

process of implementation of any developmental approach and the agency involved in the implementation, because development is as good as the agency that enacts development.

Any empirically grounded theoretical and policy discussion must be specific to the context in which it operates. And in our space/time, this is what we call the global information age. We cannot talk about development in general: we are talking about the specific conditions within which our world operates today. And this is the global information age. The global information age is characterised by the process of globalisation. Globalisation is not internationalisation and it is not the world economy: these have existed for centuries. It is the process by which a given system, be it economic or cultural, but mainly economic, operates as a unit in real time. This process depends on three new conditions:

- First, the technological infrastructure that allowed this to happen. We are a global system because we did not have this technological (or ICT) infrastructure before.
- Second, an organisational form – called networking – that allows greater efficiency and greater capacity to manage everything on a global scale without losing the purpose and the efficiency in the process. In the same way that the Industrial Revolution created large-scale organisations (vertical organisations, big companies, big enterprises), the new forms of technology that manage information and communication allow the creation of a much more versatile, interactive, flexible, adaptable system on the basis of networking.
- And third, an institutional condition: deregulation, involving withdrawal from the rules that were anchored in the nation state (which, contrary to some theories, have not disappeared).

It is the way in which states operate that opens up the connection between different states at the level of the world so that the networks can take over and criss-cross the planet, articulating activities. So, globalisation is simply the network: it's a global network (or global networks) organising every activity in

real time on a planetary scale. In that way, the whole planet is interconnected, which means what is valuable for some networks is connected; and what is not is disconnected. Therefore we go not into First World, Second World, Third World; we go into First World, which is everything that is connected everywhere; and Fourth World which has no value and is thus disconnected.

The information age refers basically to informationalism, that is, to the technological paradigm for our time that is based on ICTs. (These technologies are also connected to the biological revolution because they allow the processing of information that enables us to recombine DNA and therefore to start acting as the re-programmers of living matter.)

That is why it is said that information is not what characterises our time. Instead, it is our ability to process and apply and develop information. I like to refer to one particular study published in *Science*, a great scientific journal. Here is the revolution: in 2002, 52% of the information (all types of information: measurement, understanding and everything else) on the planet was digitised. The article calculated that it was 95% in 2007.

The same researcher told me recently, it is now 98%. So the large majority of this information is digitised and is accessible via the internet and other computer networks. That's what the technological revolution means. Not that there is information: it is information that can be recombined, accessed, developed and utilised on a global scale. That is just one measure of the phenomenon.

What are the key elements that redefine empirically, and then conceptually, the five dimensions of development, and under which conditions? And what are the conditions of their articulation? For this, let me employ empirical observation and try to emphasise the fundamental transformations operating in the world in each one of these five dimensions in the last ten to fifteen years.

First of all, let's look at productivity growth (which, of course, characterises the new economy) linked to information development. We have statistical evidence about the relationship,

strong networking and human resources, conditions that massively increase after a period of productivity, which is the surge of economic growth on the basis of ICTs, diffusing information and applying knowledge. However, at the same time, we also have statistical evidence that the productivity yields have been concentrated in the financial sector. And there has been a shift to a new form of capitalism, which is global informational capitalism, re-utilising capital using precisely these technologies. The same technologies that increase productivity in the economy also make possible the re-utilisation of capital in every aspect: derivatives, options, futures, etc. This ultimately created the major financial crisis that exploded in 2008–2010. (That financial crisis was complicated and I cannot summarise it here. For those who are not satisfied with this summary, I refer you to the book published last year by Oxford University Press under my leadership entitled *Aftermath: The cultures of the economic crisis*, in which we show the mechanism and then argue that it is the way we conceive the economy that led to the virtualisation of capital that then led to the financial crash.)

At the same time that this crisis emerged – linked to the new interaction between productivity, financial capitalism and new technology/other uses of technology – other economic dynamics took place in most of the world. That is why I always refer to this crisis that we are theoretically living in (in Europe and the United States) as the ‘non-global’, global crisis. Because at exactly the same time – between 2008 and 2012 – most of the world grew more than ever on a sustained scale. There was a little bump in 2009 because external markets had to be corrected through domestic spending. But fundamentally, all the crises in Europe and the United States over all these years, have witnessed the emergence of the so-called ‘newly industrialising’ or newly developing countries. No one knows what these terms mean. But they refer to China, India, Brazil and Indonesia. To a large extent, it means most of the world: Latin America has been growing very fast; Russia, on the basis of energy and raw materials, has been growing; both East and South East Asia have been growing.

What are the key factors beneath these new development processes that have transformed the notion between periphery and the network?

Technology is there. There is a perception that China is cheap labour. Not at all. China is high technology and relatively cheap labour, which is increasing in price. The most valuable company in the world now in terms of capitalisation value is a company called Alibaba, an e-commerce company in China. It is one of the few very large Chinese companies that is not owned by the government. Another giant is Huawei, which is multi-sectoral and invests in everything (but is a government company). The largest computer maker in the world is Lenovo. Among other things, they acquired IBM just a year ago. IBM does not manufacture computers: we know this. IBM provides services. Most of the actual computer makers have disappeared from the Western world: their whole value evaporated but we still need computers. We need computers in order to sell everything online. And to sell everything online, Alibaba has actually started to control eBay.

What are the factors for this growth that includes countries previously considered unlikely to be sources of it? Imagine Bolivia as being a miracle in the global economy. Bolivia has lithium, which is crucial in much of modern microelectronic production as well as in medical applications such as antidepressants, which are a growing market. Ecuador and Chile are the biggest sources of lithium. Again, what are the key elements that have led to the emergence of a completely new world, in which the economic growth process has been redefined in the last ten years?

First, macro-economic destabilisation. This is not simply about controlling public spending. In most of the countries I have mentioned – in Latin America, in Asia – public spending has increased. It has decreased in Europe and the United States, but in Latin America, even social spending has increased. Macro-economic destabilisation lies in fact in the regulation of capital flows: the disruptive effects of free capital flows. Is China globalised? Yes and no. It is globalised in terms of the export markets but in terms of financial capital, it isn't. There is a border – China is in

the global financial market but the global financial market is not in China, and the Chinese have been insulated from the impact of the global financial crisis. Consider virtually any country. Brazil, for example, manages exchange rates very tightly. After their crisis they had in 1999, they decided it would not happen again. And most of the Latin American countries have maintained very tight financial regulation.

Second, knowledge and information has been important. Most of these countries have incorporated the new technological systems into their production, not necessarily by *having* high-tech industries but by *using* high-tech in their industries, and particularly in their use of science- and technology-based informational tourism, informational agriculture and informational fish farming. Take Chile, which is now the economic miracle in Latin America. This miracle is not related to the Pinochet free market approach, but to the Chilean government's democratic approach in terms of state-led competitiveness in a free, open global market. Here are some examples. Chile has constitutionally made provision that 2% of its copper exports – copper is Chile's most important export – goes into a reserve fund that no one can touch. This reserve fund invests in science and R&D, with one exception: if there is an earthquake, they can use it for reconstruction. However, the fund is mainly a kind of saving fund for the future. What is Chile's main export after copper? Most people would say wine, which is a major export, but not the main one. This particular export has three times more value (not volume) – salmon. There were no salmon in Chile when I started working there 40 years ago. Perhaps there were a few in the mountains, but not in real quantities. The Chileans went to Norway to study how salmon farming was done, and then created a much more efficient, cheaper fresh-salmon exporting industry that has overtaken Norway in both the United States market, which is the important one, and the Latin American market. In Latin America, you eat salmon everywhere, as we do everywhere in the world. This salmon, however, is certainly not from Norway; it is from Chile.

Besides the companies I have cited, Indian and Indonesian

companies have been investing in structured industries practically everywhere. I mentioned Chile and salmon, but there are large areas of Argentina and Brazil being developed to produce soya for the Asian market, using a new business model that they call network business. It allows major agricultural producers who don't have land to rent the land, hire workers on a temporary basis, and use technology under licence. This all comes together when there is an order from China, for example, for a big soya consignment. Then they put together all the elements of this expertise; they act as the experts; and then they dissolve the network. After that, they recreate the network on the basis of another order for export. All this is about technology. All this is about communication, but it is not communication to produce chips: they produce chips to create communication to do their business as they do.

Structured industries have a key role in this new development. Structured industries are more important for the new growth in the world today than high-tech industries. They are, of course much more important than the old production processes, like automobile production. I am not even counting the dynamic economy, which is the economy of drug trafficking and other illegal activities. According to the calculations of the United Nations Centre for Crime Prevention, money laundering alone – just money laundering within the criminal economy, not even its production – makes up about 7% of the world's GDP, which is more than the total earnings of the world's automobile and electronic industries combined. This is now where the big money is going.

As we have seen, the old industrial production system is really going downhill from just producing automobiles. Eventually, they will unleash the capacity to produce electric cars. China has been the key market for the South, but so have India and Indonesia. What is happening now is that, on the basis of the extraordinary economic dynamism of these new giant economies, the rest of the South is developing. This is certainly the case in both Latin America and Africa. As you know, China has created a new model of growth (let's not call it development), in which the need to absorb the huge amount of energy and raw materials coming from

this economic growth of between 10–12% per year (already over the past 15 years) is pumping up the structured exports everywhere on the planet. Because of this, all the other countries in the world are exporting to China, while at the same time China is investing in their countries. As an example, Bolivia has signed a major strategic agreement to sell China all its lithium production over the next 20 years; however, it has not yet even started to extract the lithium from the mines. As South Africans, you will know about all the strategic agreements between China and Mozambique, Angola, South Africa (to some extent), and so on.

Higher education and R&D continue to be the central factors of production. This is critical; but the need here is not for something that has to be in unison everywhere. These countries are all tapping into global networks. If they can, they develop primary and secondary education but without great quality. They proceed with what I call warehousing of children rather than the education of children. Their university systems are expanding dramatically but not necessarily with great quality. What they have is enough knowledge, enough research, to connect to the global networks of research and to send students to study in overseas institutions, who come back to the country through a different model. AnnaLee Saxenian, a colleague at Berkeley, calls this model not ‘brain drain’ but ‘brain circulation’. A student goes to Stanford from India, Taiwan or Israel, gets a degree and then starts a company, and after a few years, has a healthy business. In Silicon Valley, 40% of companies now have a CEO who is a foreigner, particularly Chinese or Indian. The human capital of the world goes to Silicon Valley. But they do not just stay in Silicon Valley, but go back to China and set up a company; and then they move between China and Silicon Valley, and this sustains the network. Then other people come along and do the same thing. Thus, this network of high-tech production is not necessarily only concentrated in the main centres but is extended throughout the networked planet. Basic research is more and more concentrated, but the uses of this research depends on entrepreneurs and globally distributed innovation.

Of course the dark spot in this flexible model continues to be Africa because it is very difficult to set up minimum levels of innovation and technological research in most African countries. But in Asia and Latin America, it is already happening. However, because this network process is as described, the wealth being generated is increasingly concentrated in global networks, reproducing and enlarging the process of accumulation, but at the same time expanding social inequality (measured in income and assets).

It is interesting that the most successful book on Amazon in the United States has recently been Thomas Piketty's *Capital in the Twentieth Century*. This shows statistically that this particular model is highly dynamic. It is not going to collapse by itself. It is increasing wealth at an unprecedented level, but not recycling the wealth into the economy, but rather into caches of asset control that ultimately creates oligarchs who do not need to do anything except accumulate and keep accumulating.

Consequently, we have, on the one hand, a decline in spite of the traditional supremacy of the Cold War, and a massive expansion of wealth and markets in a large majority of countries (about 75%): not wealth for the people, but for the countries that control the people. Simultaneously, there is an increasing concentration of social and economic problems. Overall, in quantitative terms, human development has improved, whether we measure it with general education indicators, or with health indicators such as infant mortality, mortality, life expectancy, etc. This improvement is in spite of recent, well-documented epidemics. But in the world, and particularly in the so-called 'newly developing' countries, has there been a substantial improvement in education, health, basic service delivery infrastructure, sewerage, water? Yes. Housing is not good, but it is much better in terms of the rate of growth. Is there less poverty? Interestingly, there is huge inequality but less poverty, when poverty is defined in bureaucratic terms to mean a certain level of income according to whichever statistical agency is measuring it.

It should be remembered that this is also culturally determined.

Fernando Chirino tells me there is no word in Quechuan for poverty. The equivalent word, *pasha*, does not mean a lack of money but a lack of family and friends. This is real *pasha*, and you are really in trouble. But having no money is sometimes good, sometimes bad. And he reminded me of an anecdote from one of his fieldwork studies when he was in Bolivia at the time of the Argentinean crisis. He asked a poor Bolivian in the street: 'So what do you think about the world?' 'Oh bad, the world is going very bad, particularly for Argentina.' 'Wait a second, you are much poorer than any Argentinean.' 'Yes, but they are not used to being poor.' So, the point really is how you perceive poverty, and not whether the bureaucrat says, 'You are poor' or 'You are not poor'.

But, with all these provisos, there is still the idea that statistically defined poverty has diminished in most areas of the world. In 1990, taking Latin America as a whole, not just the star countries, 48.4% of the population lived below the poverty line. In 2013, it was 27.9% – a 20 percentage point decline, which occurred at the same time as massive demographic growth.

I am not biased towards communication because I am a communications professor. I became a communications professor because I considered it to be important. It's not that I forgot about sociology and went into communication. I go after the problems rather than finding out how problems come to me. Of course, communication is absolutely essential. Every survey in the world – our study on communication in Latin America, in Africa or in China – showed that communication today is absolutely fundamental for people. It is the most important item in poor people's budgets. The data show that, with 7.6 billion people on the planet, there are seven billion mobile phone numbers. Not devices. Numbers. And numbers mean subscribers. Everybody is connected regardless of precisely how – whether good or bad.

There may be bad quality connections, but, of this seven billion, three billion are smart phones. Certainly, some Swedes have three smart phones and know how to use them. But in Argentina, the rate of mobile phone penetration is 120%. In Bogota, it is 95%.

The point is that there is massive access to communication. We have shown statistically and demographically in Latin America that it is directly correlated to economic growth, but also to poverty reduction. However, all this communication doesn't do anything to improve inequality. On the contrary, it increases inequality in society – the more you communicate, the more unequal you become. However, poverty is reduced.

Increasingly, there is synergistic feedback between human development and growth in productivity. And again, it is not just education per se, but the ability to connect educational institutions, and to advance the production of goods and services throughout the world.

A most interesting case is Costa Rica, a small country of 4.5 million people which has had democracy since World War II. Costa Rica country has been growing steadily, not spectacularly, but with one of the steadiest growth rates over the years in Latin America. So what are their exports, and based on their exports, what is Costa Rica's export industry? Unless you have direct knowledge of this little country, you wouldn't know that 43% of their exports is microelectronics. After that, it is ecotourism, yet another informational industry. Ecotourism requires a very serious environmental policy. As it happens, 25% of Costa Rican territory is national parks, which is a huge value-add to tourism in Costa Rica.

How has this success been possible? First, through pacifism (see the chapter by Isadora Chachon [2014] entitled 'Pacifism, Human Development, and the Information Model'). Costa Rica took the decision in 1948 to permanently eliminate all armed forces, and is the only country in the world with no armed forces, despite being situated in one of the most violent regions in the world. Costa Rica specialises in diplomacy, and has a whole army of diplomats, who are sent everywhere – although it is usually only the Nicaraguans who bother them. This has come about through a constitutional amendment that decreed that the amount they were spending on the military – approximately between 8% and 10% – should be directed towards education and/or health instead.

Thus they created a welfare state, and destroyed the welfare state at the same time. They did not have a military coup. (You need a military to have a military coup.) Therefore they have stability. All the international institutions have a presence in Costa Rica, as does every major corporation that wants to do something in Central America or the northern part of Latin America. It's a nice country, with peace and stability.

The second reason for their success is human development. They created a welfare state with full health coverage and a skilled technical labour force that attended universities and technological institutes. This fact resulted in microelectronic giant, Intel, locating there, establishing the high-tech sector in Costa Rica. Many other companies started to arrive in the country and make use of local labour, trained at the country's universities.

The third observation is, 'be careful not to be too smart'. Intel is leaving Costa Rica for China for this very reason. As pleasant as it is to live in Costa Rica, the prospect of being in the middle of the Chinese market is more attractive. It remains to be seen if Costa Rica – having been able to do the smart thing and attract Intel, create clusters of qualified technical labour – can survive when Intel goes to China. Being married to a multinational is not such a good thing when it moves with the global market. It is a clever strategy to enable a process of synergy and development in which the basis for technological development is created. But the jury is still out on the matter of Costa Rica.

As discussed earlier, human development is working, as shown by quantitative indicators. But indicators of quality of life in most countries show a massive decline in what I would call the subjective conditions of life: violence; fear; metropolitan areas that are destructive in terms of health, transportation, pollution, etc. If we measure human development with traditional indicators, things look wonderful. However, if we measure what people do and think about their actual living conditions, we see a different situation. Take Brazil. They had a progressive government with a distribution policy that halved poverty and drove economic growth. They are doing well in terms of economic growth. All

the indicators we have mentioned are positive. But the Brazilians, starting last year and continuing to this day, protest more and more, specifically against their urban conditions – against the fear, violence, the housing, transportation, pollution, the aggravated respiratory diseases, and so on. My one-line summary is that we are improving human development, but moving towards inhuman development, which is all these other conditions.

Let me briefly consider the other dimensions, starting with sustainable development. The usual indicators are not relevant if we take development to mean sustainable development.

Most indicators around the globe are deteriorating. Global issues are not being tackled because of disagreements between nations. And we always knew that the bottom line for environmentalists was whether the whole world followed the same development model as the United States. If they did so with the same intensity and with the same growth, then the whole world, including the States, would grow, and this would be totally unsustainable. We are there already. The rest of the world is using the same model that the United States traditionally used, and is growing three to four times faster. Antarctica is melting.

It was first forecast, and now it is happening. Some people say, ‘Who cares about the penguins?’ But we will have to pay the consequences: everybody will experience the consequences. Science and technology are absolutely capable of controlling this process, knowing exactly what is happening and why, and measuring and establishing a number of indicators. But given the state of global governments, what indicators do science and technology apply to environmental degradation? Basically, scientific knowledge tells us exactly and precisely how we will die, and not how we will be saved, because it is not science and technology that can save us: it is policies, it is countries, it is people. And in this, we are way behind.

Next, one must consider dignity. On the one hand, there has been a rise in global consciousness of the basic dimensions of human existence. Take gender equality. In spite of everything, there has still been a major improvement in gender equality because of

women's current state of awareness, which is the most important thing. It is not the law, it is how women think about themselves.

The protection of children, dealing with a dignified ageing process – these are both positive trends. Animal rights: these are still contested, but the concept that we are as good as the way we treat our animals (or the animals that are not ours) is well established. This is a major indicator. Banning torture and illegal imprisonment. Although it still happens all the time, in principle it shouldn't, which again is another transformation.

On the other hand, we still have oppressive racial discrimination; we still have slavery. Political rights are formalised but not enforced; freedom of expression is free until it's not. Peace abounds but we have multiple wars all the time. The banning of the arms trade has never happened because the world's most important powers are its biggest arms dealers. Global organised crime is rampant and controls entire countries through its institutions; and we know exactly where they are and when there are attempts to deal with them. And then, we have observed a major rise in racism and xenophobia all over the world, particularly in Europe. At this point, depending on the country, between 15 and 25% of Europe's population have explicit racist and xenophobic tendencies, and are ready to translate them into mainstream politics.

If we measure by these standards, where is dignity? We are going backwards. The principles of dignity are now enshrined in all laws, even international laws. The practice of dignity is only enforced when people, particularly women, are able to resist the trends in society. But the trends in society go against what has been achieved in terms of consciousness and in terms of the law. We do have some elements which are linked to people's capacity to inform and mobilise themselves and alert public opinion. And that largely depends on internet freedom and people's global capacity to communicate with one another, which is, incidentally, not a small minority – three billion people in the world now have access to the internet, and seven billion people are connected via mobile phones. We have a global communication network that can mobilise and construct what I call the spaces of autonomy

from which societies change themselves. But, because of that, there are increasing threats to internet freedom. The internet is being used more and more for surveillance and is being targeted as such by most governments in the world.

The final key issue is that none of the debates on development, and none of the policies we design, can work unless there is a transformation of agency. This means a transformation of the institutions, organisations and human constructions that ultimately manage development, assign goals and implement them. Starting empirically, the recent processes of economic growth and human development have been enacted fundamentally by the state – by governments, not by markets.

This is extremely important to understand. Latin America in the 1990s decided that deregulation – free markets – was the route to development. The region collapsed economically due to several kinds of crisis, and it collapsed socially and politically as well. And throughout the continent, either populist or democratic governments were elected, but with a different orientation that established a new development model in most of Latin America.

An exception is Columbia. Columbia is a special and different case because it has had a very serious civil war that it is still trying to end. However, by and large, a new model has started: a so-called neo-developmentalism in the Latin American countries where the state takes the lead.

This was exactly the process that took place in East Asia. Remember that famous World Bank report about 12 years ago that said markets were key to development. Markets were seen as key to opening up the global economy, and therefore increasing global competitiveness because domestic markets were too small and too poor for major development. But the actual key actor in East Asia and South Asia, according to the World Bank and according to my own empirical observations, was the state. It was government. We now have the same thing being repeated in Latin America. After all, there is this wonderful paradox that the so-called miracle, the economic miracle of our time that has saved capitalism from deeper crisis in terms of market function,

is China, that is, a communist state. China is a state that remains communist and a state, controlling everything politically and bureaucratically, mainly through large government-owned companies and with a prescribed strategy throughout.

Interestingly, the same thing is happening in Indonesia, to a large extent, with military production; and in India, this was what ultimately led to Bangalore becoming a government hub that stimulated technological development.

In Latin America, it is absolutely clear that this has been the case. There are some bad examples – Venezuela has destroyed the economy through a patrimonial state. But in other cases – Brazil particularly, but also Chile – it has not been the market; rather it has been different levels of state initiatives and state policy.

However, if the state is the actor of the new process of development, it requires major transformation, since most states are inefficient, bureaucratic, corrupt – certainly corrupt – and in some cases more than that. They require organisational transformation. They require what we call the ‘welfare state 2.0’. We can show empirically that the European welfare states are going downhill, not because of economic factors, but because of the increasing costs and bureaucratisation of the welfare state.

We also observe massive corruption of the state, which makes the key agency of development unable to perform in the long term, particularly in such places as Africa. I would say the most important development problem in Africa is that the key actor for development in the world now is the state. And the African state is the weakest, most corrupt, most inefficient, most predatory of all states. Let’s put South Africa to one side: still corrupt and inefficient, but not predatory; not yet. But if we take state by state in Africa, the main problem is that the states are instruments, not only for oppression – that’s normal – but of predation on their societies. And predatory doesn’t just mean corrupt: it means it organises the economy of the country to sell the structured economy – the resources of the country – to whoever and then puts the wealth into the pockets of individuals or their families, in a Swiss bank, or (increasingly) in a Bahamas bank (which is

safer), or in a Russian bank. This is currently happening. Thus, the predatory state is a fundamental problem in Africa.

At the level of the world at large, the issue is that there is an increasing disconnection between citizens and their governments, even in democratic countries. The data show that two thirds of citizens in the world don't recognise their governments as democratic, including in the United States and Europe. In the United States, money controls politics; and then money controls America. This is what people feel, but they don't have answers. So they vote for whichever party; or they develop new social movements.

The United Nations is not an international, independent institution; it is a co-governmental institution. I know this personally because in 2000, Fernando Henrique Cardoso was appointed by Kofi Annan to organise what they call a panel of high-level personalities in which there were all kinds of prominent people, and one academic – me. For two years we worked on the relationship between the United Nations and the global society, looking at how we could establish a non-governmental connection. We presented the report and Kofi Annan liked it very much; and then it had to be presented to the General Assembly. The General Assembly took 20 minutes to return the report to Kofi Annan and tell him, 'Who do you think you are? We are the representatives of the people of the world and we pay your salary, by the way. So, shelve this report and don't ever come back with such an idea.' It is in the minutes of the UN General Assembly.

Non-governmental organisations (NGOs) are sometimes a partial answer in terms of legitimacy: they are more legitimate than any other institutions in the world. I call them *neo*-governmental organisations, not *non*-governmental because, in most cases, they are directly or indirectly subsidised by some kind of government.

The consequence of all this analysis, on the one hand, is that if we consider that development is the process by which empowered and informed people define their own goals (not the Millennium Development Goals, but their daily goals) and try to implement them, there is a fundamental problem. More serious than the models of development or the conceptions of development, is the

disconnection between people's capacity to determine their lives and the nature of the institutions that are supposed to implement all these programmes. This is ultimately the most important problem of development. In fact, in the interests of the developmental state, what is required at this point is the development of society, with people taking development into their own hands. And they are doing it, but not yet through institutions. We are in the process of a historical transition, caught in a very special moment in which the existing economy is highly dynamic. Human development – measured by traditional forms of indicators – is improving and increasing, but the actual perception of this as well as people's living conditions are deteriorating. The main reasons for this are violence, fear, institutional crisis, the predatory state, corruption, and an inability to feel safe because those who are in charge of making you safe are themselves the most unsafe institutions.

Under such conditions we are entering a period of historical transition in which people resort to the oldest forms of social change in humankind's history. We take it into our own hands: we confront the institutions; we try to solve the problem by ourselves. We don't know how, but eventually we will do it. And this happens with all sorts of consequences, good and bad. I'm not normative in that sense: people can do horrible things, but they will do them by themselves, and they are doing them by themselves. That is what is behind the wave of social movements I have been studying for a few years, in which hundreds of millions of people in over one hundred countries and in over five thousand cities in the world have been protesting, camping, marching, organising on the internet against the institutions, with only a little negotiation because people don't trust them.

In my view, frankly, there is one interesting thing in all these developments and that is what is happening in Brazil these days. I was there this time last year when the movement had started a year ago. They wanted me to go again, but I could not. I had to be in South Africa. They said, 'But we have the World Cup.' I said, 'But at this point, there are other problems in Brazil.' They answered, 'No, you will see, it will be a very fun World Cup.' Could we

have ever imagined that Brazilians would be totally opposed to the World Cup and protest against it so massively, even though they are very proud of their team, who they want to win the Cup? They are against the World Cup because of the corruption in FIFA, because of the corruption of local authorities that have given in to the interests of the construction companies taking over cities and destroying much of the environment. This notion was expressed very well in one of the major demonstrations recently: 'We exchange one hospital for ten stadiums.' If the Brazilians can do that, the whole world can.

Note

This chapter is an edited transcript of a public lecture delivered by Manuel Castells at the Stellenbosch Institute for Advanced Study (STIAS) in Stellenbosch, South Africa, on 5 June 2014.