# Internet and economic growth

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**IN 2017, Facebook's founder Mark Zuckerberg published a manifesto about the future, where he argued that connecting everyone to the internet is necessary for building an informed community. His thoughts echo those of many others who have argued that access to the internet is necessary for solving the most pressing socioeconomic problems of our times.**

Originally a DARPA (Defence Advanced Research Projects Agency) project to improve communication systems for the American forces, the internet is now an integral part of our lives. From landline phones, that could take substantial time to connect, to the net — everything now just a click away. Still, many people around the globe either don't have access to it or access is uneven, slow and cumbersome. Realising its importance, substantial sums of money have been invested in projects the world over to expand the internet's access. For example, a new initiative called LOON comes with the innovative idea of expanding internet access through stratospheric balloons. Since the height of traditional antennae is limited and it might not be possible to set them up in many places due to reasons like security, balloons can facilitate access in such areas without the need for towers.

What kind of effect can this critical technology have on economic growth? To consider the question, it's important to understand the nature of such technologies.

It is what experts label as a 'general-purpose technology'. Martin Mühleisen (The Long and Short of the Digital Revolution) terms such technology as "one that has the power to continually transform itself, progressively branching out and boosting productivity across all sectors and industries". The changes wrought by them tend to bring enormous long-term benefits, but are highly disruptive too. Historically, there are only three known examples of such phenomenon, namely the steam engine, electricity and the printing press.

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The magnitude of change that this technology has wrought has been tremendous. The examples are too many to cite in one article. A 2017 report by McKinsey, for example, calculated that about 50 million jobs in the US would be transformed completely due to digitisation. Smartphones were unheard of at the turn of the 21st century. Now, an estimated five billion people have them. More importantly, the pace of transformation continues to accelerate. From quantum communications to 3D printing, the world is in a state of constant flux that has tremendous implications for the economy. Unlike the previous global pandemics (eg Spanish influenza of 1918) that completely upended the working of economies, a substantial part of Covid-19's economic devastation has been prevented due to the availability of the internet which has allowed work from home, thus keeping the engine of global economy running — albeit at a slower pace. Hence, the availability of the internet has become absolutely critical in today's economy, a fact that has led Dr Nadeem Haq, vice chancellor at the Pakistan Institute of Development Economics, to call for the internet to be treated as a right.

But does the availability of the internet automatically transform into an increase in per capita and aggregate income? Whatever transformation that has taken place, has it happened by accident or design?

As Mühleisen points out, many benefits of general-purpose technologies like the internet come not merely by adopting it, but by adapting to it. He gives the example of the ride-sharing firm Uber that uses digital technology to deliver better services. Similar sentiments have been shared by other observers of note. One of the most famous quotes related to technologies such as computer and internet comes from Nobel Prize-winning economist Robert Solow. In 1987, when personal computers and the internet started assuming cult proportions and America's economic growth began to be put down to this technology, he famously quipped that the "computer age is everywhere, except in productivity statistics". This became known as the Solow Paradox. Simply put, Solow was of the view that the mere presence of computers and the internet is no guarantee of income and productivity growth.

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In the context of the above, what can we say about the process of the internet and economic growth? Specifically, does it hold any lessons for Pakistan? We can take a simple example to understand where we stand and how the process can benefit the economy and society. The Pakistani government started adopting computer technology in public-sector organisations in the early 1990s. This was complemented by trainings in various programmes (eg Microsoft

Office package). This should, ideally, have led to a substantial lessening of paper-based work. But files and papers are still a massive part of government administrative business, and the expense they accrue is increasing. Similarly, the digitisation of land records should have led to an end to the role of patwaris. Yet, they continue to be as strong and influential as they have ever been. On the opposite side of the spectrum, we have the example of the National Command Operation Centre using technology effectively to implement smart lockdowns.

This brings us to what Mühleisen emphasised: it's not just about adopting, but more importantly, it's about adapting. Those who have adapted well and tailored their system as per the technological trends wrought by the internet (private or public sector), have discovered many advantages. Amazon, Facebook, AliBaba and eBay are just a few examples of how the availability of a disruptive, universal technology can bring in benefits worth billions of dollars. Of course, even more critical was the fact that people like Jeff Bezos had plans to optimise it.

Thus, for countries like Pakistan, it might not be enough to just have universal access; there must also be a plan for optimising it. Most public offices, for example, do have free net connections, but it is of little help if they are used for searching for plots or watching live news events. At the other end, violent organisations like the TTP have also benefited tremendously from the presence of the internet, which has helped them spread their propaganda.

For the moment, there is no such plan and Pakistan is a bit of a Solow Paradox.

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