Is 9 to 5 over? Maybe it should be.

Costis Maglaras
Dean, Columbia Business School
David and Lyn Silfen Professor of Business
c.maglaras@gsb.columbia.edu

The Covid-19 pandemic crisis is ongoing, and it its wake has brought tremendous loss of life and economic loss, disruption and uncertainty. It has simultaneously brought to the surface important challenges about global healthcare systems, political systems and institutions and their response to the multi-faceted crisis, the connectedness and dependencies of modern economies through global supply chains, and issues of inequity, as manifested in segments of the population that have been most affected in terms of health and economic outcomes through the crisis.

This crisis will, over time, bring forward opportunities for change that will affect our future. Education will change through this experience. The healthcare system and the growth of tele-medicine, almost overnight, will likely persist. Retailing may forever change. Travel and hospitality will likely experience permanent shifts in demand. Changes that will affect the future of work, including remote work and automation will accelerate. Urban transportation will also be crucially affected, both at present and potentially over the long haul. The current crisis is forcing us to rethink and reimagine many aspects of our lives.

Organizations, small and large, are grappling with the process of reopening, amidst the evolving pandemic crisis, dealing with measures for social distancing, protocols for how to operate buildings, including building lobbies, elevators and shared workspaces, etc. In most settings, this would require a phasing of employees back to their work environments, and it will likely require organizations to adapt into operating with some of their workforce working remotely.

In urban centers, such as NYC, where I live, some of these questions are particularly vexing, as commuting to work is a process that for most involves the use of public transportation, and a significant daily brush with congestion. And, the present public health mandate for decongesting subway platforms, subway cars, trains, and city buses will only further aggravate the city's daily commute routines.

Any degree of social distancing in subway cars and buses will significantly reduce their peak transport capacity. For example, if commuters need to be at least 4ft apart, but were allowed to be within 2ft of each other in the past, then capacity would be reduced by 75%; if pre-COVID-19 distancing in peak hours was closer to 1ft, then the capacity reduction will be closer to 95%; the physical boundaries of the car somewhat improve these calculations, but, still, peak hour capacity is likely to be reduced by 65% to 80%.

About half of New York City's residents rely on the subway system to commute around the city, and most of us must have first-hand experience that the NYC subway system operates at capacity (or beyond) during rush hour. So, how can we possibly commute if capacity is reduced by 65%? The second thing every commuter knows is that ridership in the subway system is dramatically lower before rush hour kicks in, and immediately after it ends. That is, the system is not busy all of the time, but it is extremely busy during some narrow time periods. But this suggests that even with dramatic reductions in peak capacity, we may still be able to safely move millions of us across the city, if we manage to

spread commuter demand more evenly beyond the typical rush hour periods. The exact same observation applies to the road network, again something that we are familiar if we drive to work or commute by a taxi or ride-hailing car.

So, maybe this is the perfect time to critically reevaluate our rigid work schedules. Do most of us have to start work at 9am? Should we all commute and aim to arrive to work at the same time? In our personal lives, we try to avoid congestion, picking the time we run errands, when we visit the DMV, or when we do our grocery shopping. Staggering work schedules as a means to alleviate congestion is an old idea – indeed an entire book was written based on a study commissioned by the City of New York back in 1968 by Larry Cohen, who was on the faculty of Columbia University's Operations Research Department. The case for revisiting this idea was very strong back in January of 2020 in order to alleviate congestion, but it is urgent now. Staggering work schedules may be one of the simplest yet most effective measures to take for individual organizations and entire communities that are concerned with the safety and health of their employees and citizens on one hand, and the restart of their economic activity on the other. Perhaps some should go to work early, say at 7:30am, some at 9:00am, some at 9:45am, and some yet at 10:30am; between 7:30am and 8:30am we want to facilitate the transportation of school children. Such an initiative would smooth the commuter flows of large groups of the working population and decongest the public transportation system, decongest our road network, and decongest our ingress and egress from our work buildings. It would also make up for a much more efficient and even usage of these crucial resources – our subway, bus, train and road networks.

A simple calculation suggests that by spreading commuter usage more evenly over a four hour window one may be able to serve about 25% to 35% more commuters, while never operating above 80% to 85% of peak car occupancy. This would compensate for about half of the loss of peak transport capacity due to distancing measures. Moreover, by not operating at maximum occupancy, this will reduce congestion delays caused by full subway cars and crowded platforms, and reduce overall transportation times. Increased ridership, even under distancing measures, will crucially serve our economy and bring much needed revenue to our subway, bus and train networks.

In my own organization at Columbia Business School, we are taking these ideas to heart – we will stagger the start and end of class times so that students do not face congestion going in and out of classrooms and using public facilities; we will stagger the time students first arrive to school to facilitate their transport; and we will stagger the arrival of our administrative staff.

Demand smoothing is not a new idea, and we try to do it in our road, airline, electricity networks, as examples; often this is achieved through price incentives, such as giving a discount when consuming electricity overnight, or buying a cheaper ticket if you fly midday or midweek. Peak-load, or congestion, pricing is a useful idea, that can be used to mitigate congestion and affect driving behavior and overall car usage, but before we revert into price incentives, we should try to reduce the effects of the structural cause of peak usage of our infrastructure due to our rigid workday hours.

There are complexities on how to implement this idea, including importantly those that have to do with the caring of children, but we should be able to address them with flexible planning. Simply put, ironing out the current constraint that we should all start work at the same time seems like a good place to focus in alleviating the transportation safety concerns that we may face, as well as the congestion from arriving and leaving from busy buildings where we work. And, frankly, imagining urban centers like NYC post-COVID-19, perhaps we should adopt staggered workdays as a way to alleviate congestion for the long haul.