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# Market Structure Rules

Essay by Reed Hundt, May 15, 2008 in response to The Future of the Internet – And How to Stop It

The personal computer has been "generative" — Jonathan Zittrain's felicitous coinage – because of what Andy Grove, Intel's famed CEO during the Internet's salad days, called the horizontal structure of the industry. He referred to the nature of the value chain: competitors in microprocessors did not enter the software business; the software firms did not enter the computer assembly and distribution business. These firms could enter, but in each horizontal market they had their hands full in terms of keeping up with the pace of innovation, the impact of competition, and the growth of the overall market.

The old AT&T, pre 1984 break-up at the hands of the Reagan Antitrust Division, was non-generative, as I see it, because it was a vertically integrated business, one in which a single company aspired to sell everything from the client device (aka telephone) to local communications services to networked service to international long distance. The break-up was specifically designed to promote "generativity" by separating the local access market from the rest of the firm's businesses.

Now the old broken-up AT&T has been reassembled, by dint of perspicacious mergers and successful persuasion of the Bush Administration, into two new versions of Old Ma Bell – these being AT&T redux and Verizon. Yet it is not at all clear that the two new vertically integrated Bells are non-generative. We don't know yet.

But my suspicion is that they will be generative – that is, they will participate in a maximization of productivity gains for their sector and for the rest of the economy in which they play a vital enabling role – if and only as they face the same forces that made the PC business so tremendously beneficial for Americans. If cable and satellite and independent wireless firms press the Bells to innovate, then whether or not the two firms as a whole are integrated they probably will have to respond to competition at the horizontal layers where the attackers hit them. If cable has content offers to customers that attract subscribers, then the Bells will need to generate new and interesting content. If a wireless firm comes into the market with an advanced mobile broadband offer, then at that layer the Bells will need to respond.

Generativity follows competition, I suspect. Market structure rules: it sets the industry conduct and ultimately performance, to use terms from industrial organization classes.

Tim Bresnahan of Stanford, and previously the key economist on the Justice Department's case against Microsoft, has identified three key questions to ask about the status of competition in information sector firms. I think these are the three key questions about generativity, and I think they map well against Jonathan Zittrain's fascinating essay. First, is there divided technical leadership? (There is, where hardware and software in the PC are not made by the same firm.) Second, is there 10x change, or epochal change, such that everyone is hurrying to keep up? (There is in mobile broadband, not so much in fixed line telephony.) Third, is adjacent market entry possible? (Cable going after the Bells exemplifies this point.)

But generativity is not an easy way of life for a big incumbent, with a dividend to pay out and earnings to hit if careers are to progress. Collaborative creativity is all very fine for the upstarts

and attackers of the business world, but if it means revenue sharing for the incumbent it takes on another cast altogether. So there are many reasons why an incumbent might not embrace the openness and generative approach of the PC value chain.

With the motive to pull up the drawbridge against marauding collaborators, an incumbent can well look to the threats of privacy invasion and spam attacks and to the demands of government to monitor and survey and find in these themes many reasons to oppose a generative, or "open" model.

Economists are not likely to be of one mind about the relative productivity gains of the two approaches – non-generative or closed and generative or open. Technologists, it has been said, tend to be either anarchists or authoritarians when it comes to their preferred form of government, and while that stereotype is unfair, still the choice of rule of law, and not some scientific or economic paradigm, probably will dictate the outcome. To my way of thinking, democracy depends in large part on the general embrace of the generative or open model – at least, our American republic's modern version of democracy does so depend. JZ refers to people taking "an active part in building the world they want.." I believe that imprecation resembles the great poet Czelaw Milosz's "command to participate actively in history." He was talking about the overthrow of the Soviet Union, a more desperate matter surely than the toppling of a vertically integrated business model. But still the core choice is freedom versus convenience, as has been the case in every revolution, whether benign like the information revolution or something else, like the struggle for liberty against armed oppression. JZ does us all a grand service by explaining the details as well as illuminating the large themes that inform this choice, even as we make day by day in business and governmental decisions that are reshaping the Internet.

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