



Dynamic pricing

Pervasive smart meters and ubiquitous tracking services create platforms for the dynamic pricing of resources, access and travel to manage demand.

Most of us today are used to the price of goods and services remaining largely stable. The cost of a loaf of bread, a pair of jeans or a bottle of water varies little if at all. Where there is variation because of competing suppliers and retailers changing their prices, this is largely marginal and occurs on a week-to-week or month-to-month basis. While the prices of key commodities, from sugar and coffee to oil and steel, do vary minute by minute on the global stock exchanges, this volatility is not immediately passed on through the supply chain but instead is absorbed by traders, intermediaries and wholesalers. Even when there are spikes in wholesale prices caused by heightened resource constraints resulting from the supply/demand imbalance of rice, wheat or gas, for instance, we as consumers are largely insulated from them. All in all, the vast majority of areas currently experience a pretty stable market where average prices are reactive and lag the supply-side costs by at least a month or so.

Where we do experience price variation on a standard product or service, it is largely predictable and clearly communicated in advance. Off-peak and peak-time ticketing on public transport is a widely adopted mechanism for trying to balance out consumer use of trains, trams and buses in many countries so that those who are able to might decide to save money by travelling outside of rush hour periods or by buying tickets in advance or in bulk. The same principle is applied on many toll roads.

Also in the transport sector, airline seat costs vary not only during the day using a more segmented peak/off-peak model, but also through significant discounts for booking early. In an industry where there is limited capacity the airlines are keen to maximise passenger loading, using variable pricing to attract the majority of customers early and maximise revenue for last-minute or flexible bookings. Over recent years the varied pricing models adopted by the low-cost airlines, from Southwest in the US to RyanAir in Europe and SpiceJet in India, are a well-recognised area of variable pricing understood by customers and refined as a core competence by competing operators.

In a few other areas, we are also experiencing tiered or variable pricing for different experiences. From the timing of a visit to the cinema and the choice of seats at a concert to paying a premium to watch live sport on TV, across the entertainment sector many of us are already used to the concept of paying different fees to experience an identical product depending on the time of day or distance from the stage. In addition, in some countries, we are also used to the concept of peak and off-peak energy use – for domestic as well as industrial users. While these examples are long established in their respective areas, to date they have shown limited variation and none has yet varied in real time. With the widespread introduction and adoption of a number of key technologies, ranging from smart

meters to mobile-based location, things are about to change. In response to rising constrained supply of some core resources and in a desire to more finely tune consumer behaviour in an increasingly proactive manner, the advent of dynamic pricing models is on the horizon.

Starting off in the utilities sector, many countries are currently passing regulations to introduce smart meters that will allow real-time monitoring of electricity, gas and water use. At a basic level, remote reading of utility consumption allows the industry to have a better view of demand and so match supply and, at the same time, enables individual domestic and industrial customers to track their consumption and associated cost. However, as highlighted in several of the Future Agenda workshops, the same technology also allows far more sophisticated interaction.

Given that water supply varies on a seasonal basis and consumption on an hourly if not minute-by-minute basis, with increasing physical and economic water stress prevalent in many countries, the capability to use smart meters to introduce dynamic pricing is being increasingly discussed. In Singapore, a country well recognised for its water scarcity, individual households are already given a set quota of basic water supply on a daily basis and a higher price is charged for additional consumption. European regulators are now preparing the way for a similar approach but with more segmented differentiation: 'Every household will get a daily allowance of water sufficient for the essentials but additional use will be charged at different rates that vary depending on the time of day and season.' So, customers will be able to see the immediate cost of having a bath rather than a shower, using their washing machines at peak rather than off-peak times as well as the price of cleaning their cars or watering their lawns.

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By using dynamic pricing to make supply/demand imbalance both visible and financially significant to customers, utilities companies aim at better managing the overall system. In some markets there may be an initial challenge from consumers who might take time to come to terms with and trust the new technology, but once it has been accepted the same principles apply to electricity and gas with a view to both better managing and better communicating individual and collective use. The concept of reverse charging is also gaining traction whereby individuals who generate their own electricity will be able to sell their excess back into the national grid. This inverts the smart meter model as customers can become net contributors as well as net consumers. Interestingly, one of the RCA projects explored how this might be manifested for electricity supply through simple clear real-time feedback at each socket. Given that the introduction of smart meters is now a legal requirement for 2020 in many countries, this platform for dynamic pricing is clearly being put in place.

Back in the transport sector, transit systems across the world from Japan to India to Europe are also on the verge of introducing more dynamic pricing – mostly enabled by location-based mobile services. As payment goes ticketless, we will increasingly be charged directly when our mobile phone gets on and off a train or bus. Contactless payment systems are already in place in transit systems in places like Hong Kong and London and are rapidly shifting from card

to mobile. Given the ability of mobile phones to be positioned within a radius of 50 cm, the widespread use of this platform for transport charging has long been advocated and is now being introduced. Again, as with smart meters, this provides a basic platform upon which more sophisticated pricing systems can be introduced. So, for example, as transport system operators seek to better manage passenger loading and avoid congestion, they can implement real-time increases or decreases of the cost of travel on a train-by-train or journey-by-journey basis. Instead of simply having peak and off-peak cost structures, they can introduce a far more granular segmented model. Customers can, for example, see the cost of catching a train, but also the saving that can be made by waiting half an hour for the next one; they can see the relative real-time costs of alternative transport options to get to the same destination and so decide to take a bus rather than a train; and, it is argued, they can make value-based judgements on the speed/cost of travel to best suit their requirements. Such dynamic systems will provide greater visibility of loading and so allow the use of variable pricing to nudge passengers into making alternative choices and so improve the efficiency of the overall network.

Also, in the arena of road pricing, the introduction of similar technologies is planned to allow passenger and

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freight vehicles to also experience dynamic changes. Pay-as-you-drive insurance systems have already been trialled by companies such as Aviva to encourage and reward customers for travelling during off-peak hours and on quieter routes. Equally, road haulage firms already benefit from choosing whether or not to use toll-roads and at what time of day, to make their overall journey both time and cost efficient. With the introduction of systems such as those offered by the likes of Airsage, TomTom and Sense Networks, real-time predictive traffic forecasting is already possible. Match that with dynamic pricing and a host of opportunities is unlocked. Take this into areas such as media consumption and a significant change is on the horizon.

While the prices of staple products such as bread, jeans and bottled water, as well as more expensive goods like laptops and TVs, will probably remain largely stable, it is clear that in the areas where variability of cost can lead to efficiency improvements and influence of consumer behaviour, dynamic pricing will take hold over the next decade.



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