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Our signals expert considers the disruptive effect of CAVs

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Smart Highways' illustrious leader said could I write about weather albeit in an ITS context? So I tried and wow was it a dull read. So I protested, and he kindly relented and said to take a look at something else. Here goes: references to Donald Trump, Kim Jong Un, or Brexit seem to increasingly induce a near comatose reaction when mentioned. There are only so many times that the same ideas can be shared, exasperation expressed and so on. On the same basis there is a very real risk that if I say Cooperative and Autonomous Vehicles then amongst the readership I will hear the sound of bodies slipping from chairs into a dull slumber. Sorry but now you know the alternative is something about weather... I am going there anyway. The headline question for me at the moment is, "What problem will the take up of Autonomous Vehicles solve?" I suspect that your answer may depend on what you do for a living. If you are an ITS or Traffic Engineering practitioner then you are likely to start with congestion, segue into emissions and close out with mobility and a side order of journey time reliability. If you are a haulier, you may look first at your wage bill, then at your bottom line, glance briefly at your capital reserves and decide just how many of these Autonomous HGVs you can afford BEFORE your competitors make the same decision and start undercutting your prices. For you CAVs are a business opportunity. As a Sales person (or similar), your role requires that you put in as much face to face time with your clients as possible, showing them that they matter and are important. The journey from one client to the next was previously a necessary evil but now becomes an opportunity to capture that knowledge, tidy away immediate actions and prepare for the next client. As an automotive manufacturer there perhaps less clarity. Next big things attract first the premium buyers, followed by mass adoption. The car fleet rolls around on a cycle of around 10-15 years, with the principle is that the next car is better than the previous one. For the car manufacturers there is a looming spectre of mobility as a service. An Autonomous vehicle can, in effect be a personalised bus/taxi, a pay per use or subscription service pitched

by either the manufacturers themselves or opportunist entrepreneurs as a logical extension of the vehicle leasing arrangements that are already available to their customers. More efficient use of the means of mobility is likely to lead to lower ownership, it will trade early revenues from sales for longer term revenues from subscriptions – an extension perhaps of the leasing schemes already widely on offer. What do CAVs offer network operators? Well the CAV is a floating vehicle so the fleet is now huge. CAVs are also heavily instrumented and well connected, so offer data, gigabytes of data. This supports prediction of traffic, and by interactive control of vehicles CAVs offers smoothing of flows, and better distribution of the reduced

vehicle emissions. Carriageway condition can be monitored (vibration and shock sensing) and necessary preventive maintenance applied more effectively. Then we come on to (central) Government. Now it gets tricky. Years of living under various Governments teaches us all more than we probably realise about how our society is managed. Governments and the civil service appear to perform a balancing act, weighing economic prosperity against the wellbeing of the people. Arguably those are the same thing, but it is largely about who has the money, who doesn't and what constitutes a "fair" distribution of same. So Government wants CAVs to be assimilated quietly into our way of life without rocking the boat – the how question and Government's place in that is much more complex. I think that the various interested parties are looking for guidance and Government is where they are looking. Revolutions aside, sudden changes to the world we live in are largely evened out by the damping effect of how those changes have to flow or join smoothly to where we are now. CAVs, like mobile phones, will have a transformative effect on our lives, we will get used to a revised mobility, place more reliance on a more abstracted type of mobility which we engage with less, but which may constrain us more. Am I any closer to understanding what problem they are solving? No not really. Are you? I hope so! Should I have stuck with writing about the weather? Almost certainly. There's something for you to look forward to next time.