SMART ATTRITION:

As the parking meter follows the pay phone

By Bern Grush

Most of us in the parking industry are aware that the days of the parking meter are waning. But these machines will not disappear suddenly. Rather they will experience a long slow decline over the next decade, in many ways repeating what the phone booth has just been through. How meter attrition will be managed is a key consideration for your city's next meter refresh—especially because it should be your last one. The wrong choice could mean a significant loss.

In March 2014, Dennis Burns wrote about the success of the Washington, D.C. pay-by-phone program: "…the D.C. program has earned 550,000 customers and accounts for 40 percent of the city's parking revenues. About 80 percent of the seven million transactions to date employ smart phones, with payment options that include credit cards, an online and mobile money management solution, and PayPal." [1]

When will you go meterless?

While we have come some distance since the first parking meter in the 1930s, we will progress much further in the next few years. As automobiles get smarter, the act of pausing to pay for parking - even on a smartphone - will become unnecessary and increasingly undesirable. High enforcement costs are driving cities toward digital credentials tied to license plates that can be rapidly scanned for payment confirmation. New technologies are enabling more robust analytics that allow flexible pricing management. Older style, curbside meters—both single space meters (SMSs) and multi-space meters (MSMs) delay this progress.

The current supply of on-street meters in North America ranges from a full complement of pay-by-license plate meters, such as in Calgary and Pittsburgh, to none at all. At some point in the foreseeable future, parking will be managed in the great majority of all these cities by all-digital means including phone, Web or in-vehicle, self-paying meters. Accompanying this will be a uniform enforcement approach that uses the license plate number to read parking credentials from the cloud.

The proliferation of digital payment technologies change drivers' expectations regarding the effort they now make to pay for parking sessions. Municipalities will be forced to adapt—and will recognize higher retained revenue as they do.

Smartphone payment technology is already diminishing the use of on-street meters in many cities. Intelligent, self-paying, in-vehicle technology will further contribute to their demise. In the foreseeable future, on-street meters will follow the phone booth into history, because fixed, physical, on-street assets cannot be as flexible as wireless systems such as smart phones, sensors and self-paying services.

With the top two cell-pay providers in the US each claiming "hundreds" of cities as customers, the trend toward virtual parking meters, digital parking payment, and licence plate-enabled parking (LEP) and enforcement credentials appears unstoppable. Many in our industry are increasingly seeing fully wireless parking payment management as the self-evident future.

What path will your city take to prepare for the coming world of asset-free parking management?

How will street meters fade?

As cities continue to adopt virtual collection and enforcement, what is to become of on-street meters? As cities approach 90 or 95 percent of payment transactions by wireless, digital means—whether by 2018 or 2023—how will they be able to justify the customary, on-street meter refresh every decade or so? Will ongoing meter maintenance remain viable? Will it make sense to carry out licence-plate scanning while still checking for expiry flags on single-space meters (SSMs) or peering into windshield after windshield for paper credentials? Wouldn't that mean double labor instead of less labor? Increased expense rather than lower expense?

At what point will cities need to address the growing redundancy? And how will they approach the end of the on-street meter? Targeted removal of all meters? Natural attrition from accident, vandalism, weather and wear? Gradual reduction on a planned schedule?

Two cities in the UK offer a lesson in how not to do this. Barnet, a suburb north of London, and Westminster each experienced a high volume of pay-by-phone adoption and planned to remove all meters. Both programs ran

into consumer and political resistance and their respective Councils bowed to pressure to keep or reinstate some machines. When Westminster first announced the move in 2007, the press sounded optimistic [2], but it is clear from any number of online articles that the machines are still there [3]. In Barnet's case, it became highly politicized [4]. Zagreb, Croatia on the other hand, introduced a true pay-by-phone system in 2001 where payments are through the phone account rather than via a third party system using a credit card. The system has stabilised with about 75% of all payments by phone, but the city has not yet reduced the number of meters installed.

There are a few problems with removing on-street meters all at once. In our industry, as in others, we know that multiple payment options increases payment compliance, so removing an option — especially one so traditional and well understood as the on-street meter — is a non-starter. Presumably councilors and parking managers in both Westminster and Barnet learned a lesson. They should have known that not everyone would have access to a mobile phone and credit account needed to make payment. Nor would everyone be willing to pay that way. Adaption to change takes time.

Digital, wireless payment technology such as pay-by-phone and autonomous in-vehicle meters will certainly end the parking meter as the mobile phone has ended the phone booth. But there are still a few phone booths in most cities, even though they may be far fewer in number, less well maintained, and increasingly less used. Someday, of course, there will be none — phone booths or parking meters.

Repositioning the single-space meter

During this final decline, we need to maintain parking turnover, revenue, and happy customers. And we will face budgetary pressures to reduce capital and operational expenses demanded by a full complement of parking meters that are being used for a rapidly diminishing number of transactions. How can we maintain this balancing act?

The answer to this will depend on where you are now and how eager your city is to be relieved of its meters. Pervasive acceptance in cities with existing meters can be expected to take several years and will require some gentle nudging. This will take planning, and perhaps additional payment alternatives.

The existing starting points for curbside parking meters configurations can be considered in three key categories: no meters, SSMs and MSMs.

Starting with no meters

Starting out with no meters can be an advantage. In 2013 the City of Galveston Texas instituted paid parking in its Seawall area along the Gulf coast in order to raise funds for local infrastructure improvements. The cost of meters and meter collection would obviously diminish retained revenue, so the City deployed only pay-by-phone for parkers and set up local merchants with a way to accept cash from parkers without phones. This merchant system enters parkers' plate numbers to register payment credentials with the pay-by-phone enforcement system. According to Galveston's mayor: "…the paid parking program on Seawall Boulevard is already more profitable than any other paid parking…" [5].

Starting with no meters is now a workable route for some cities and in certain local circumstances. In Galveston, residents voted for paid parking to upgrade costal infrastructure to protect the City. If your city is engaged in a new development that encompasses new public parking or a shift from free to paid parking, the Galveston approach provides valuable guidance to avoid meters from the start.

In other cases, your city may wish to institute paid parking for demand management reasons. The value of using curbside meters may still be evident. In such cases, the selection of SSMs with the ability to accept credit cards is more appropriate. But read further—you may have an opportunity to purchase fewer machines by mixing in a portion of asset-free spots from inception.

Starting with SSMs

Switching from SSMs to MSMs requires changes in work processes, maintenance complexity, collection routines, enforcement training and how the technology is promoted and explained to parkers. That makes the switch non trivial. If you have delayed until now, it may be less advantageous to switch from SSMs to MSMs knowing that the useful lifespan of curbside collection is waning. My father bought a brand new car when he turned 90, then drove it only a couple hundred miles before his license was revoked. When David Onorato of Pittsburgh wrote about his 2013 meter refresh, he anticipated his next meter refresh by suggesting "the possibility that city streets could largely be meter free [depending] on advances in technology available [in a few years]" [6].

For this reason, your best exit strategy may be to play out these final years by sticking with the SSM approach you use now. Consider upgrading them to take credits cards or even to be programmable over the air for performance pricing, a policy that is getting increasing play co-temporal with the rise in popularity of digital credentials. Unless you plan to maintain parking fees at 25 or 50 cents an hour indefinitely, the coin-only SSM is not the best solution. Cities that bring in meters that accept credit cards uniformly report an increase in payment compliance. An increase in revenue dramatically shortens ROI time, which could be compounded when coupled with an optimal attrition plan.

Besides the savings implied by not making a momentous shift that would return value for only for a short time, there is an additional value from the SSM given its flexibility during the coming process of attrition. If your city is using SSMs, then an efficient strategy is to rely as much as possible on your current

Table 1: Migration paths from curbside meters to asset-free parking management

	What you have now	What your next refresh should be if you must retain curbside meters	Should you add Pay-by-Phone?
1	No meters		
2	SSM – coin only	SSM w CC option or MSM Pay by licence plate	
3	SSM w CC option		
4	MSM - Pay and display		yes
5	MSM - Pay by spot	MSM – Pay by licence plate	
6	MSM - Pay by licence plate		

supply, allowing normal attrition from all sources to erode your operational inventory. You should welcome and take advantage of that erosion. As machines come out of service, redistribute the remaining supply so that each block face has gradually fewer meters. First one meter, then more. Mark meter-less spots as digital/wireless parking only.

To provide the clearest possible message for parkers, arrange the meterless spots in the leading spaces with respect to the arrival direction of a vehicle. In this way parkers see a consistent, steady message as they arrive at the block face at which they intend to park. They see the gradual loss of meters, signaling the steadily increasing value of switching to wireless payment. This form of behavioral "nudging" is relatively gentle, allowing non-adopters to gradually experience less parking availability and for adopters to see a clear reward from switching. You can even adjust pricing to make the fee at curbside meters balance the incremental transaction fee that often accompanies wireless payment services. Alternatively, you could subsidize the wireless transaction service, but there is diminishing justification for a city to subsidize automobile use. Either way, the fact of having drivers pay for the wireless transactions and taxpayers pay for the curbside meter transactions is a barrier to full attrition of the meters.

Washington DC is already in the process of marking a few block faces this way in a trial related to asset-free parking. In this case, a third-party provides pay-by-phone services for those on-street spots without meters.

Caution: taking curbside meters from whole block faces at once might have the unintended consequence of encouraging circling and U-turns to grab spots that still have a meter.

As a scenario, imagine that your city averaged seven metered spots per block face and that on average the decline in your inventory of serviceable SSMs was such that you lost about one parking meter per year per block face. This would imply a six to eight year span to full attrition. If you took that strategy, you might still have a few stragglers at the end of your planned period of attrition, and would need to consider other forms of parking credentials such as might be purchased from local merchants as Galveston has done. Remember that multiple payment options increase compliance.

Starting with MSMs

If you have already made the switch to MSMs—and there were many good reasons to have done so—it would be very difficult, if not inappropriate, to argue for a return to the SSM. The way to make the best of the sunset years of the MSM is to either stay the course with what you have, or if a refresh is necessary, migrate to pay by license plate (PbL) meters. That is because the most efficient form of parking credential is a cloud-based credential attached to the vehicle license plate, which PbL meters provide. Neither pay by spot nor pay and display provide a natural link to credential checking as does pay by phone, pay by retailer or self-pay in-vehicle meters of the asset-free future.

The greatest immediate value of PbL meters is that they help you close the loop on the LEP combination of real-time credentialing and enforcement technologies that coalesce around a universal identifier—the licence plate number. The reason is that the all-wireless future of parking—whether smartphone, in-vehicle, web, or retail merchant—will be LEP anyway, so an exit through PbL MSMs would also have a strong payback.

In the end, you will manage the final throes of the MSM in a way similar to that of the SSM—through attrition. You can redistribute a declining supply by monitoring location-dependent transaction volumes. Set transaction count criteria that will help you decide whether to resupply if compliance drops or perhaps to remove some machines earlier. Compliance always remains critical.

Invest in programs that promote wireless credentials rather than in more machines. Stay tuned to what other cities are doing, as some will sell off retired machines. In the late summer of 2013, Pittsburgh sold 200 SSMs to Lancaster Parking Authority at $52 apiece [7].

Include wireless credentials

When wireless parking payment is introduced, it rapidly dominates parking transaction counts. For this reason you should always include pay by phone and self-pay in-vehicle meters as the easiest route to asset-free parking—easiest both for the municipality and the driver.

So the approach to take in moving toward asset-free management encompasses: promotion of wireless transactions, progressive meter attrition, nudging drivers away from curbside meters and allowing retailers to more effectively engage in parking payments via wireless apps. The technologies to use are PbL MSMs, pay by phone, in-vehicle self-paying meters, and license plate-based enforcement. As well, adding demand analytics and performance pricing will go a long way in leveraging the efforts you will invest in making these changes.

However long you may think or wish this will take, you will certainly agree that it cannot happen instantly (change worth making seldom does). And with nearly the same certainty, you will agree that this process is already underway. By now many also believe it cannot be stopped. ∎

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About the author:
Bern Grush, VP Innovation, PayBySky, bgrush@paybysky.com