



# decriminalization of parking services

## *a paradigm shift*

BY AMALENDU CHATTERJEE

**P**arking has become a hot topic in many cities' business and political community. I have never seen so many articles, op-eds, and letters to the editor in local, as well as national, newspapers on this topic in so short a period. Most notable in these articles is the dissatisfaction of numerous potential patrons of downtown cultural and commercial venues at the little parking that is available, and the punitive and predatory nature of the current parking regulatory system. Articles have discussed meter and no-meter, fee and no-fee parking, business interests and recreational value, stricter policies and relaxed policies as possible solutions to the problem, but none of these articles so far has explored the idea of using technology to solve the city's parking problem. A shortage of foresight into the rapid nature of the growth of downtown may be blamed for the current state of parking in the city, and radical and revolutionary thinking is required to create an efficient, flexible, modern, and customer-friendly system. Technocrats, parking administrators, parking operators and the city council must work together to bring the desired change — a change that brings customer needs and city needs together. In discussing a technological solution to this problem, I will focus on three themes: harnessing technological progress, updating city regulations, and integrating a real sense of customer service.

My contention is that technologies are available now to make the revolutionary changes necessary to integrate the city's services and the community's needs. The key to a successful parking program will be the flexible integration of the multiple ways in which potential patrons interface with information: web technology, the cell phone, handheld devices, interactive voice response systems (IVR), geographical information systems (GIS), color-coded bar code

readers, license plate readers (LPR), scanning of permits, RFID, PDA, WiFi, etc. Please visit [www.perk-park.com](http://www.perk-park.com) for a preview of one particular implementation that integrates these systems in a way that maximizes benefit for both the municipality and the customers. This particular system can be further customized and improved with additional features and functions.

In creating a new parking system, the problem is that the array of services is very complex, including street parking, airport parking, event parking, sporting events parking, garage parking, etc. The needs of customers — short-term versus long-term parking, daytime versus nighttime parking — can be diverse as well. We can develop a unique and robust application for all parking scenarios to address all problems associated in each particular scenario. To demonstrate, I will present a situation involving a potential patron of downtown amenities, the current way that his parking needs are met, and the way that his parking needs would be met in the ideal system.

**Step 1 – The Scenario:** You are driving from City A to City B for a business meeting. Your meeting is at a hotel in a busy street, downtown. Your meeting starts at 11 a.m. and finishes at 1 p.m. You come with your wife and would like to attend an evening concert at the City Memorial Auditorium, South Street, before returning home late that evening. While you are in the meeting your wife drives around downtown to see the sights and to go shopping. How could you make your driving and parking a pleasant experience without unpleasant regulatory encounters?

**Step 2 – Current Approach:** You go to Mapquest for directions from City A to City B, and print them out before you start your car. You find South Street and see your hotel. You then look for a public garage to park near the hotel assuming the hotel charges \$3 more than the available public

garage. You may have to circle a couple of times around the hotel block to find a suitable place, increasing the congestion and pollution in the city. You become frustrated as it looks like you may be late for your meeting. When you finally reach your meeting, your wife goes out with the car and parks on the street to buy some souvenirs. She is one minute late to come back after shopping. To her dismay, she gets a parking ticket costing her \$10. She either pays the ticket or fights the case through a process that may take several court dates for resolution, and may cost several hundred dollars in legal fees. After all this is over, you buy another parking permit for the concert in the evening but drive around (congesting roads during high traffic time and adding air pollution to the environment) to find a suitable place close to Memorial Auditorium. All in all, this is a clumsy process.

**Step 3 – A New Approach:** While the best option would be for all parking to be free, the second best option is implement a system that properly exploits technology in combination with flexible new parking regulations; this option would replace the traditional, inflexible, unattractive, hard-line approach to parking regulation. Potential facets of the new system include:

1. Prior arrangement of a payment method with an appropriate authority as is done with other public utility commissions (telephone, water, electricity, etc.) or purchasing a parking credit (registration process using a web site);

2. Making reservation of a parking space (pre-

payment for a guaranteed space) using an Interactive Voice Response (IVR) system;

3. Agreeing on standards among parking authorities or third party to share information and payments (nationwide Application Service Provider — ASP);

4. Step up rates for longer duration of resources; and

5. Exploration of cell phones for instant payment.

In fact, cell phone companies already have many of these features and may be able to support municipalities in their development of this infrastructure. This type of billing makes accepting parking payments easy, time sensitive with potential for flat billing and step-up billing for overstay — it's like collecting fines on-line instantaneously rather than going through the over-taxed judicial system. The parking authority can also

implement this sort of system themselves once they build up their own IT infrastructure.

Instead of ticketing for overstay as is done currently, applying the following simple procedure would be possible. You register with the parking authority for parking credits; once your credit is established for a certain parking limit you are free to park anywhere and any time with the help of interactive voice response (IVR) as is done for telephone, water and electrical usage. You may be given a PIN or special code for such privileges. In a street parking scenario with a space number, you park in a space first and then call an 800 number using your cell phone to activate a parking privilege. After you provide a PIN code, the system will recognize your parking privilege and the IVR



will guide you to set the parking start time, end time, rate and total charges for that particular space and for the duration you chose. It will even let you deactivate your privilege when you leave even if it is before the time you initially chose. Once the privilege is deactivated before the initial period your charge will be adjusted based on your duration and according to the city regulations. No physical meter or coin is required for such procedures. Physical meters are replaced with a smart meter application (SMA) — a centralized software package for all spaces (meter or non-meter) — saving a city millions in capital investment, maintenance of meters, inventory of parts, coin collection, etc. Instead, you enhance your IT infrastructure to include parking services along with other services.

You need a second procedure to handle parking time violators. I do not recommend ticketing as is done now because it detracts from the image that a city like City B wants to project. Instead, if a parker violates his period, there may be two situations. The parker voluntarily extends his time using the internet or cell phone within the limit of the city regulation. If the parker does not do so, the city can extend duration and charge more for the extended duration as permitted by the city or step up rates equivalent to ticketing. To justify such actions, the system can send a warning message first for an action as permitted by regulations and execute the action based on the warning if there is no response using short message service (SMS) via a cell phone. SMSs or e-mails are exchanged as an official record to avoid disputes with parkers. Revenues will be collected graciously and electronically with no complex court proceedings for simple time violations. This may be the simple building block of parking decriminalization. More complex modules can be developed as we gain experience.

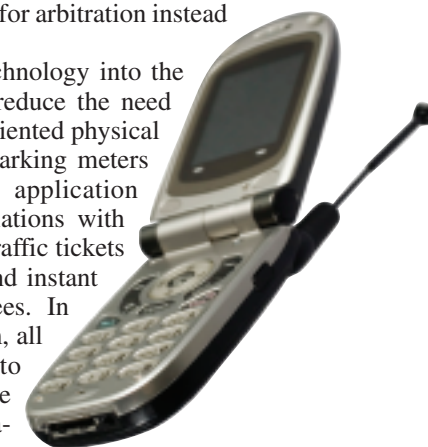
Coming back to you and your wife's trip to City B, while at Mapquest, you click on the City B parking web site for all details of the parking garage, parking space availability in the garage and street, street parking area, rate, distance from the hotel, etc. While at the web site you now select a garage, level or even space of your choice and make reservations for a day or so and get a print out of your reservation to use for parking in City B. If you are willing to pay more, the city may extend your privilege to park at any of the garages around the city including the garage close to the City B Auditorium for the evening concert. In addition, you can also get another permit or privilege for your wife to use for on-street parking. Or, for get-

ting a one-day garage-parking permit, some cities may make street parking free for you if you display your permit at the window. In fact, you can solve all your parking needs with one click — garage parking, street parking and concert parking. You can now go directly to the parking garage of your selection, without circling around, and present your parking permit. Your wife can park anywhere on the street to shop and buy souvenirs without worrying about parking tickets or a court fight. If you share your license plate information or type of car and color, the parking authority will recognize your license plate for the royal treatment. If you violate any traffic rule you may be warned of consequences with a time limit for corrective action before action is taken against you.

**IN SUMMARY,** the decriminalization process involves evolutionary changes in regulations to include the following:

- Registration with the city/municipality for an account
- Using the account privilege to park any time, any where
- Reservation of a parking space for close proximity privilege
- Documentation of all transactions/correspondences for on-line viewing by respective parties
- Introduction of PIN for parker's security identity
- Identification of parker with License Plate Reader (LPR)
- Use of cell phone for parking mobility
- Step up rates for over usage
- Elimination of ticketing for parking fee collections
- Keeping all records for arbitration instead of court proceedings

The integration of technology into the parking system can also reduce the need for a cumbersome, cash-oriented physical infrastructure: eliminate parking meters with the smart meter application (SMA), replace time violations with step up fees, and replace traffic tickets with an online warning and instant collection of violation fees. In contrast to the cash system, all activities are recorded to improve fairness, as is done by banks, electrical compa-



nies, and telephone companies, and by municipalities for water bill collections. Furthermore this system eliminates those familiar altercations between the driver and the ticket-issuing officer if they happen to meet 30 seconds after the meter expires.

Further benefits of this paradigm-shift are as follows. For the parker, the benefits are...

**CONVENIENCE.** The driver can avoid endlessly circling around a parking lot looking for a good space. You know where you are parking even before you start the car.

**SAVED TIME.** Not only does the driver save time in getting into the parking lot and driving straight to the space, the premium spot means the walk into the airport terminal (or sports venue or whatever) is shorter as well.

**FLEXIBILITY.** The driver is able to make new reservations and change existing ones while on the move.

**IMPROVED INFORMATION AND PEACE OF MIND.** By having access to information like directions to parking lot and distance from the lot to a given destination (a terminal, a museum, the arena box office, etc.), the driver is better able to focus on more important issues.

This is also not a question of investment by the city with no return. For the parking authority, benefits are...

**INCREASED REVENUE PER SPACE.** The parking authority is able to generate more revenue from the same number of parking spaces by stratifying its customer base.

**BETTER CUSTOMER SERVICE.** The parking authority can improve customer service to passengers, fans, and other end users.

**IMPROVED TRAFFIC FLOW IN PARKING LOTS.** By providing dedicated parking areas for premium customers, the parking authority can reduce the number of cars using a given entrance or exit, thereby improving overall traffic flow in the lot.

**ADVANCED FEE COLLECTION.** The parking authority receives both the base parking fee and the reservation premium before the parking event.

**REDUCED CAPITAL INVESTMENT.** More spaces can be added to the public parking inventory, to increase the revenue base and when desired, with small software changes, replacing capital requirements for buying meters and other parking equipment.

**IMPROVED CASH MANAGEMENT.** By reducing the amount of cash handled by employees, the parking authority has better control over its revenues.

**BETTER COST CONTROL.** Automating such tasks as enforcement and ticketing reduces overall cost structure and requires less manpower and less time.

**IMPROVED SECURITY.** The parking authority is able to improve overall security through identification of customer license plates, authentication and authorization with digital signature, and LPD/OCR (camera to computer License Plate Detection/Optical Character Reader) integration for total automation of the parking process.

**IMPROVED INFORMATION ABOUT CUSTOMERS.** The parking authority can collect valuable personal and vehicle information about customers.

Of course, no miracle is possible in the short-term. Drivers have to be educated, employees have to be trained, and technology has to be trialed for maturity. The potential looks great if we work together to move in a positive and constructive direction. This 21st century approach to parking can decrease congestion, decrease pollution, and create a warm and inviting atmosphere for patrons of downtown City B. By all means, municipalities must investigate all of the possible solutions available to them. Halfway measures limited by outdated regulations and pre-Internet thinking, however, will only keep City B from becoming everything that it has the potential to be. With people increasingly dependent on cell phones, the internet, hand-held devices and other personal electronics, an intelligently designed parking system that integrates these technologies in a customer-friendly way is the only way to be successful.

This article has been written for the forward-looking mayor and councilmen to understand the problem and its solution. This may also be one way to influence the city council for smart and visionary decision of future parking. We are convinced once city/municipality starts this paradigm shift, private companies will orient themselves to be competitive and also bring the desired changes in the industry. ■

**Dr. Amalendu Chatterjee** is vice president-Technology for Eximsoft International.

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