

## Disruptive innovation

### *Case study: Transforming criminal justice with electronic monitoring*



For decades, politicians have offered voters a stark choice: less crime and greater safety means tougher sentencing laws and a great deal more money spent on incarceration. *Fewer* prisoners, in turn, were seen as equaling higher levels of crime.

This perspective has dominated criminal-justice thinking in much of the world, and nowhere more so than in the United States, which houses a higher percentage of its population behind bars than any other country. With less than 5 percent of the world's population, America has nearly one quarter of the world's prisoners."<sup>1</sup>

As of 2008, approximately 2.3 million people were behind bars in the United States, equivalent to about one in every 100 adults. This represents a *300 percent increase* in the prison population from 1980, when half a million Americans were behind bars.<sup>2</sup> Lower-level offenders, moreover, have accounted for a significant portion of this growth.

This rise in incarceration came at a huge monetary cost. U.S. state corrections costs now top US\$50 billion annually and consume one in every 15 discretionary state budget dollars.<sup>3</sup> Prison costs now trump higher education costs in some states.<sup>4</sup> California, for instance, spends 10 percent of its general revenue on prisons and only 7 percent on its higher education system of 33 campuses and 670,000 students.<sup>5</sup> And the social cost for many minority communities, where a large percentage of the young men are now locked up, is staggering.<sup>6</sup>

Though the United States tops the charts in prison population, many other countries from Brazil to Russia, also incur huge budgetary and societal costs from extremely high incarceration rates.

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## By removing low-level offenders from jails and prisons and putting them under house arrest, local, state and federal governments could dramatically reduce their spending on incarceration.

### Breaking the trade-off

The technology with the greatest potential to break this trade-off and disrupt traditional incarceration originated as a way to monitor the eating habits of cows. For years farmers have used radio frequency-identification (RFID) tags to keep track of their cattle.

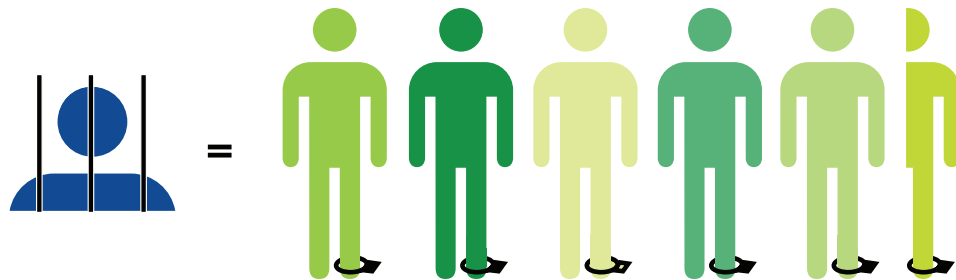
Today, the technologies involved in electronic monitoring include home monitoring devices controlled by radio, wrist bands and anklets tracked by global positioning systems (GPS), alcohol testing patches and even voice recognition.

The criminal justice system uses electronic monitoring (EM) technologies primarily for offender tracking, confirming that offenders are where they are supposed to be or are prevented from approaching identified high-risk areas. For example, authorities can be alerted when a sexual offender approaches a school or playground.


EM technologies generally fit into one of two categories, passive or active. *Passive* monitoring involves programmed contact, whereby a computer calls an offender at random or at specific times of day. The technologies are passive in that the offender's presence is only noted when contact is made. *Active* monitoring systems are more common, and are called active because a *continuous* signal exists between the offender and monitoring authorities. Typically, some sort of transmitter attached to the offender (an anklet or bracelet) continuously transmits their whereabouts via GPS or RFID tags.<sup>7</sup>

By removing low-level offenders from jails and prisons and putting them under house arrest, local, state and federal governments could dramatically reduce their spending on incarceration.<sup>8</sup> It replaces a one-size-fits-all approach for offenders with one that better segments

**Figure 1: Number of offenders that can be tracked for the cost of one prison bed**



Approximately 5 ½ offenders can be electronically monitored for the cost of incarcerating one offender behind bars



**Criminal justice by the numbers**

- Corrections costs (US)=\$50 billion annually
- Consumes 1 of every 15 discretionary state budget dollars
- California spends more on prisons than higher education

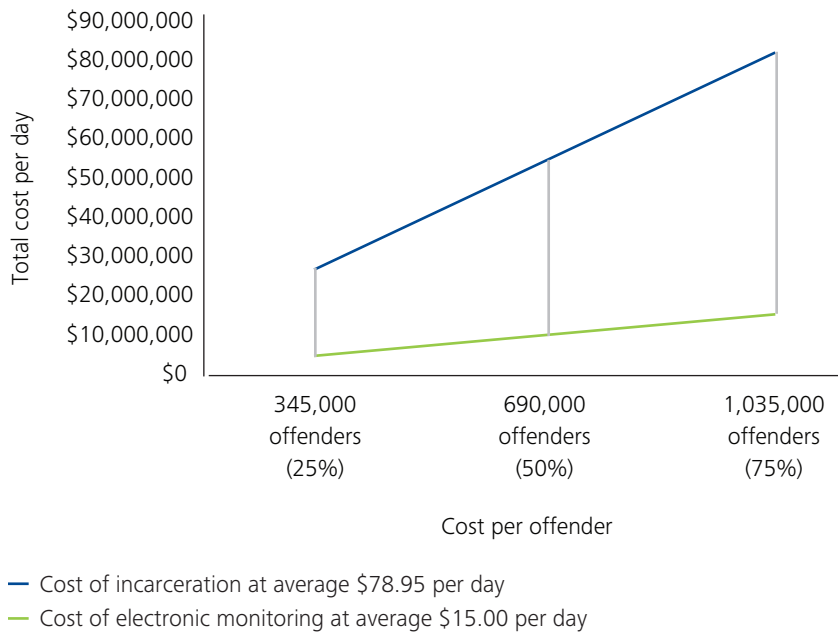
the population and employs the most appropriate and cost-effective approach for each offender segment depending on the crime committed and potential danger to the community.

In 2008, the average daily cost of incarcerating a prison inmate in the U.S. was US\$78.95.<sup>9</sup> By contrast, the average daily cost of managing offenders through electronic monitoring technologies ranges between US\$5 and US\$25 per day, depending on the type of technology used and the community using the technology.<sup>10</sup> Many localities, moreover, bill offenders for the cost of electronic monitoring and equipment.<sup>11</sup>

Non-violent offenders today make up more than 60 percent of the U.S. prison and jail population.<sup>12</sup> Figure 2 shows the potential savings that could be generated by shifting varying percentages of these non-violent offenders from incarceration to electronic monitoring. The approximate annual savings of moving 50 percent of low-level offenders to electronic monitoring would be about US\$16.1 billion.<sup>13</sup>

In addition to direct savings, EM also creates significant savings in opportunity costs. The Pew Charitable Trusts estimates that “two-thirds of male inmates were employed and more than half were the primary source of financial support for their children” before beginning to serve their sentences.<sup>14</sup> Placing these offenders behind bars, at an enormous cost to government, also removes them from their jobs. They are no longer providing tax revenue to their communities and can no longer provide for their families, increasing the demand for government resources.

**Figure 2: Potential net savings per day from electronic monitoring**



Source: Deloitte GovLab. About 2.3 million Americans are behind bars. About 60 percent or nearly 1.4 million of them are low-level offenders. The table reflects net savings generated per day by moving low-level offenders from behind bars to electronic monitoring.



### Cost Savings from Electronic Monitoring

- Daily costs of prison in the US=\$78.95 a day
- Daily cost of electronic monitoring=\$5-\$25 daily
- Savings from moving 50% of low-level offenders from prison to EM=\$16.1 billion

Will EM disrupt how we think about incarceration for non-violent offenders? Only time will tell, but as governments are forced to seek cost reductions and innovative ways to use existing resources, EM is already climbing the productivity curve (see figure 3).

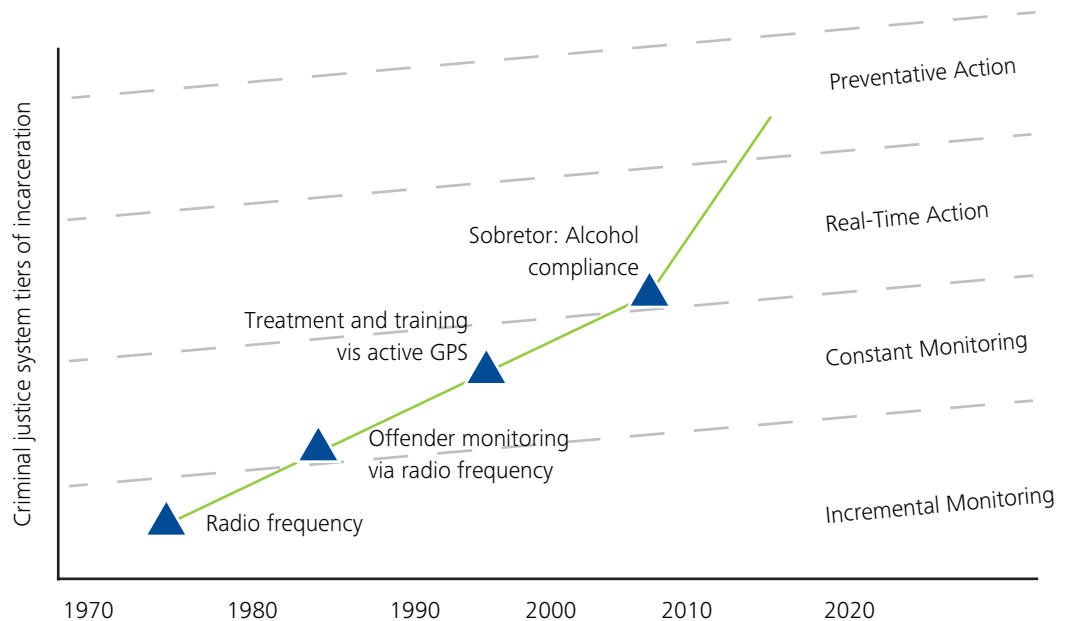
Already, new devices such as alcohol detection patches are augmenting EM by monitoring and thus discouraging specific behaviors, such as consuming alcohol or drugs. These technologies force the criminal “to monitor himself... effectively outsourcing the role of prison guard to prisoners themselves.”<sup>17</sup>

### Pace of disruption

In the United Kingdom, about 70,000 offenders annually are subject to electronic monitoring, a number likely to rise significantly in the near future.<sup>15</sup> In October 2011 alone, the UK government bid out £1billion worth of electronic monitoring contracts. Significant growth in electronic monitoring also is expected in other European countries as well as Brazil and South Africa.<sup>16</sup>

Several governments have made concerted efforts to spur the more rapid adoption of electronic monitoring. The United States is believed to be the biggest subscriber to electronic monitoring. More than 20 different electronic monitoring companies provide electronic monitoring for more than 100,000 offenders according to best estimates.<sup>18</sup> Other countries are moving rapidly in this direction.

Figure 3: Expanding capabilities of Electronic Monitoring (EM)



Source: Deloitte GovLab

## Endnotes

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2. "The High Cost of Incarceration." February 29, 2008. *The Denver Post*. [http://www.denverpost.com/ci\\_8400051](http://www.denverpost.com/ci_8400051)
3. "Collateral Costs: Incarceration's Effects on Economic Mobility." The Pew Charitable Trusts. 2010. Page 2.
4. "Vermont Tops List of States Spending More on Prison than College." February 28, 2010. The Pew Center on the States. [http://www.pewcenteronthestates.org/news\\_room\\_detail.aspx?id=57564](http://www.pewcenteronthestates.org/news_room_detail.aspx?id=57564)
5. Jennifer Steinhauer, "Schwarzenegger Seeks Shift From Prisons to Schools," *The New York Times*, January 6, 2010, <<http://www.nytimes.com/2010/01/07/us/07calif.html>>
6. According to the Pew Research Center on the States, incarceration negatively impacts the economic mobility of former inmates. For example, "serving time reduces hourly wages for men by approximately 11%, annual employment by 9 weeks, and annual earnings by 40%." Since the minority populations disproportionately make up the prison population (1 in 87 working aged white men are behind bars compared with 1 in 36 Hispanic men and 1 in 12 African American men), high incarceration rates negatively impact minority populations. Worse, the impacts of incarcerated parents on children are lasting. "Children with fathers who have been incarcerated are significantly more likely than other children to be expelled or suspended from school and family income Family income averaged over the years a father is incarcerated is 22 percent lower than family income was the year before a father is incarcerated." "Collateral Costs: Incarceration's Effects on Economic Mobility." The Pew Charitable Trusts. 2010. Page 4-5.
7. "Electronic Monitoring." The John Howard Society of Alberta, The Reporter. Volume 18, Number 1. May 2001.
8. Ibid.
9. "One in 31: The Long Reach of American Corrections," The Pew Charitable Trusts. March 2009. p 13.
10. The costs vary depending on whether the offender is monitored intermittently or 24 hours per day, whether the equipment is leased or purchased and whether the job of overseeing the program is contracted out. John Howard Society of Alberta, "Electronic Monitoring," 2000, < <http://www.johnhoward.ab.ca/pub/A3.htm>>. Electronic monitoring costs US\$5.25 a day and GPS costs US\$8.75 a day in [the State of] Georgia. <http://jjie.org/push-for-ankle-monitoring/5125>
11. Mount Lake Terrace contracts with an electronic home monitoring company at a cost of US\$5.75 per day, per offender but the offender is required to pay the city US\$20 per day. This results in net revenue for the City of US\$14.25 per offender, per day. <http://www.cityofmlt.com/cityServices/police/electronicHomeMonitoring.htm>
12. John Schmidt, Kris Warner, Sarika Gupta, "The High Budgetary Cost of Incarceration," Center for Economy and Policy Research, June 2010. p.1. <<http://www.cepr.net/index.php/publications/reports/the-high-budgetary-cost-of-incarceration>>
13. Deloitte calculations, GovLab, December 2011.
14. "Collateral Costs: Incarceration's Effects on Economic Mobility," The Pew Charitable Trusts. 2010, p. 3. <[http://www.economicmobility.org/assets/pdfs/EMP\\_Incarceration.pdf](http://www.economicmobility.org/assets/pdfs/EMP_Incarceration.pdf)>
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18. Todd R. Clear, George F. Cole, Michael D. Reisig and Carolyn Petrosino, *American Corrections in Brief, 1st Edition*. Wadsworth Cengage Learning, Belmont, California, p.98.

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