

Business Regulatory Lessons Learned from Amusement Park Safety Concerns: An Integrated Approach to Business Regulation

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I. INTRODUCTION

The modern global economy encompasses a wide variety of businesses and companies. Businesses differ greatly in their method of operation and definition of success. Businesses range from small local companies to international corporations. Given this wide variance, business regulation is a very complex topic. There is no one-size-fits-all method of regulation. A method that will work well in one industry might fail in another. Thus, it is crucial to understand the major types of regulation and select the method which best fits a given industry or problem.

This article examines the following four major types of business regulations: command and control regulation, market-based incentives, information disclosure, and management-based regulation. The article argues that the selection of a business regulation type should be based upon the regulation's substantive ability to address a specific problem or harm. In other words, selecting the best regulation to correct a problem depends upon the exact harm involved.¹ The method of regulation that is

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¹ This approach is in direct opposition to many scholars who argue that one type of regulation is always superior to another and that the method of regulation should always be applied to reduce or eliminate a

“superior” and/or “the best” is the method that is the best fit to solve a specific dilemma. An illustrative example of proper regulation selection is the current controversy surrounding the federal government’s potential regulation of the amusement park industry.

The federal government currently has no authority to regulate amusement parks with fixed rides, as it only has authority to regulate parks with non-fixed rides, such as fairs and carnivals.² There is also a lack of comprehensive regulation at the state level, as only three states currently regulate amusement parks.³ Thus, most amusement parks are not required to report injuries sustained on their rides. The only way to document injuries is through indirect methods, such as examining hospital records and news coverage of major accidents. Self-regulation is the current practice of the amusement park industry.

Each year, over three hundred million individuals visit amusement parks with fixed (permanently placed) rides.⁴ Some riders sustain serious injuries or death from fixed rides at amusement parks, which primarily result from three specific failures: design defects, construction problems, and maintenance problems. Design defects can seriously injure or kill riders due to miscalculations in the level of force that riders are exposed.⁵ For example, one rider “died from a ruptured brain aneurysm after a ride on [a rollercoaster] at Knott’s Berry Farm.”⁶ Construction problems associated with rides can also injure or kill riders.⁷ For example, as a result of a restraint that failed due to improper assembly, a rider “died after falling from [a ride] at Knott’s Berry Farm.”⁸ Finally, maintenance problems can seriously injure or kill

wide range of problems. For example, some scholars contend that market-based regulations are always superior to the traditional command and control regulations. By contrast, this article asserts that each type of regulation has advantages and disadvantages, depending on the problem or harm that the regulation addresses.

² Fixed park rides are not subject to the Consumer Product Safety Act (CSPA). See 15 U.S.C. § 2052(a)(1) (2006) (“The term ‘consumer product’ . . . does not include such a device which is permanently fixed to a site.”).

³ California, Massachusetts, and New Jersey are the only states that directly regulate amusement parks with fixed rides, generally utilizing the command and control method of regulation. Permanent Amusement Ride Safety Inspection Program, CAL. LAB. CODE §§ 7920-32 (West 2008); MASS. GEN. LAWS ch. 140, § 205A (2008); Carnival-Amusement Rides Safety Act, N.J. STAT. ANN. §§ 5:3-31 to 5:3-56 (West 2008).

⁴ See Introducing the National Amusement Park Ride Safety Act of 2005, 151 CONG. REC. E1042-43 (daily ed. May 19, 2005) (statement of Rep. Markey), available at <http://www.gpoaccess.gov/crecord/05crpgs.html>.

⁵ Certain rides subject riders to very high levels of force; forces greater than astronauts experience during takeoff. Some riders sustain serious injury or death as a direct result of the force. Riders have received subdural hematomas (bleeding of brain), broken necks, serious back injuries, and brain stem tears as a direct result of the high levels of force generated by certain rides. See Eric Taub, *Some Fun*, N.Y. TIMES, Sept. 9, 2001 at 4. In the article, UCLA neurosurgery professor Dr. David Hovda asserts that rides can “twist the brain like a water balloon.” *Id.*

⁶ *Id.*

⁷ See *Report Details California Theme Park Injuries*, N.Y. TIMES, Jan. 7, 2002, at 17A (providing that riders have been tossed from rides because of restraints that failed to function properly, not because of poor design, but because they are improperly assembled, meaning they fail because of construction defects).

⁸ *Id.*

riders.⁹ For instance, a locomotive-themed rollercoaster at Disneyland in California derailed solely because the park failed to maintain the ride, which killed a rider after the locomotive detached from a passenger car.¹⁰ Because of the varying nature of these problems, specific-types of regulations should be applied to separately address them. The regulations should be tailored to each problem. This article concludes that in the amusement park context: (1) information disclosure is best approach for design defects, (2) command and control is the best regulation method for construction problems, and (3) a management-based regulation approach is best-suited for maintenance problems.¹¹

In May of 2005, Congressman Edward Markey proposed the National Amusement Park Safety Act.¹² Citing the numerous injuries that result from rides and the dearth of regulation, Congressman Markey advocated for the passage of the Act. Unlike most legislation, however, the Act is very concise.¹³ The Act gives the Consumer Product Safety Commission authority to regulate amusement parks with fixed rides and wide latitude in selecting the method of regulation to be utilized.¹⁴

Part II of this article defines and describes the main four types of regulations that are often used to regulate businesses. Part III applies these regulations to the amusement park controversy. In addressing *how* the amusement park industry should be regulated, this article demonstrates that regulation type should be specifically tailored to the harm the regulation seeks to correct.

II. TYPES OF REGULATION

The four major categories of regulation are command and control regulation, market-based incentives, information disclosure, and management-based regulation. This part of the article describes each and demonstrates their relative advantages and disadvantages by comparing them in terms of fairness, dynamic efficiency, and enforceability. Effectiveness, an important element in the evaluation of any regulation, is contingent upon the fact-intensive situation at hand and the regulation itself; thus, analysis of effectiveness is omitted from this part, but discussed in part III.¹⁵ Understanding the underlying philosophy of each method, as well as the

⁹ Ride carts have jumped the track solely because of failure to inspect and maintain the ride. See, e.g., Nick Madigan, *Man is Killed in Ride Accident at Disneyland*, N.Y. TIMES, Sept. 6, 2003 at 7A.

¹⁰ *Id.* at 7A. Disney admitted liability, reporting that poor maintenance and mechanical failures caused the accident. Michelle Himmelberg, *Disney Settles Lawsuit of Fatality*, O.C. REGISTER, Dec. 3, 2005.

¹¹ The tort system is not addressed as a form of regulation because the tort system functions as a baseline that is already in place. However, if the tort system alone were adequate, then Congress would not require additional regulation.

¹² National Amusement Park Safety Act of 2005, H.R. 2500, 109th Cong. (2005).

¹³ It strikes the language in the Consumer Products Safety Act that exempts fixed rides from the Consumer Product Safety Commission.

¹⁴ This article assumes *arguendo*, and for the point of illustration, that Congressman Markey is correct in his assertion that government should have regulatory authority for fixed amusement park rides. The article also assumes that the Consumer Product Safety Commission is the correct regulatory division. Thus, the “whether” and “who” elements are not substantially addressed in this article. Rather, the “how” element is addressed and is the focus. How should the Consumer Product Safety Commission regulate the amusement park industry? This article will address *how* the Consumer Product Safety Commission should regulate the industry.

¹⁵ The concept of effectiveness measures both the difficulty of implementation and the ability to influence behavior. It is a practical inquiry, yielding few reliable generalizations.

strengths and weaknesses, is essential in order to correctly apply the best method of regulation to each individual problem in the amusement park industry.

A. Command and Control Regulation

Command and control regulation is probably the most consistent with the layman's definition of regulation. A government that utilizes command and control regulations sets mandatory standards and penalizes those who do not comply.¹⁶ This method utilizes negative reinforcement techniques, such as monetary fines for rule violations, as the primary mechanism to encourage compliance.¹⁷ A clear example of the command and control method of regulation in environmental law is the Clean Air Act, which mandates a reduction in pollution and allows the Environmental Protection Agency ("EPA") to regulate the technology used to achieve that goal.¹⁸ The EPA sets the mandatory standard for "best available technology" and companies that use technology below that standard are fined. An indirect example of a command and control method of regulation affecting the airline industry is National Transportation Safety Board ("NTSB") jurisdiction, which is conferred upon the occurrence of an airline accident, to investigate the accident. The NTSB compels the airline to comply with its requests or be fined for noncompliance.¹⁹ An example of command and control regulation in the automobile industry is the government mandates for vehicles that fail to meet minimum governmental safety standards, whereby such vehicles cannot be sold in the United States.²⁰ This regulation penalizes noncompliance with financial loss.²¹ The basic premise behind command and control is that the government, not industry, mandates the specific standard that must be met.²² Companies are penalized for falling below the standard rather than rewarded for exceeding the standard.²³

Fairness is generally a strength of command and control regulation. After all, command and control sets a standard in a particular industry and gives the industry ample notice of what is necessary for it to comply. In the context of environmental regulation, companies that employ environmental measures that are explicitly

¹⁶ See Richard B. Stewart, *Models for Environmental Regulation*, 19 B.C. ENVTL. AFF. L. REV. 547, 548 (1992) ("[T]he government instructs each resource user on exactly how to operate its activities.").

¹⁷ Command and control regulation is the traditional governmental approach to environmental regulation. Under command and control, the government typically requires all factories in a given industry to utilize the "best available technology" to reduce emissions to an acceptable level. James Salzman, *Beyond the Smokestack*, 47 UCLA L. REV. 411, 458 (1999).

¹⁸ See generally Clean Air Act, 42 U.S.C. §§ 7401-7671q (2006) (requiring that "highly cost effective controls" or "best available technology" be utilized).

¹⁹ For example, under the Independent Safety Board Act of 1974, Pub. L. No. 93-633, 88 Stat. 2156 (1975), air accidents create NTSB authority to examine wreckage, conduct interviews, view maintenance records, fine the airline, and engage in other similar investigatory acts.

²⁰ See generally National Traffic and Motor Vehicle Safety Act of 1966, 15 U.S.C. §§ 1381-1420 (repealed 1994) (citing same).

²¹ *Id.*

²² See Stewart, *supra* note 16, at 550 ("In some cases the central government specifies the precise technologies or designs that industry must install. In other cases, it expresses central standards in performance terms . . ."). Of course, industry practice and custom often substantially influence the standard the government sets. *Id.*

²³ See Cass R. Sunstein, *Administrative Substance*, 41 DUKE L.J. 607, 628 (1991) (explaining that best available technology ("BAT") "requirements punish [innovating] companies for their development of new control technology, rather than rewarding them").

defined as the “best available technology” are almost certain to avoid penalty.²⁴ Thus, companies can make a clear choice: comply and be virtually certain to avoid a fine or take a calculated risk and potentially receive a fine.²⁵

The command and control method of regulation is generally fair because it gives the company or industry notice of the standards in advance.²⁶ Also, if a standard seems unjust, companies may challenge the regulation in court.²⁷

However, dynamic efficiency, the ability of a regulation to generate innovation, is generally a weak point of command and control regulation.²⁸ Indeed, command and control is often criticized for creating no motive to innovate.²⁹ After all, under command and control, a company that barely complies with standards and a company that exceeds standards in a positive direction are in the same position: neither company receives a fine. Since command and control regulation does not reward progress and innovation, there is little surprise that it does not encourage innovation.³⁰ In the environmental context, the use of the best available technology standard encourages companies to install minimum technology requirements rather than to innovate.³¹ Indeed, the best available technology sets a threshold standard and companies have little interest in innovating to make the best available technology even better.³² In fact, companies have incentive not to innovate so the

²⁴ See Stewart, *supra* note 16, at 550 (“[R]egulators typically base such standards on the use of a specific technology, and polluters face strong administrative incentives to use that technology in order to demonstrate compliance.”). It would be difficult for the government to fine a company for using the technology it recommended.

²⁵ The virtual certainty compared to the calculated risk is sometimes true under command and control regulation. However, many command and control regulations, like traditional laws, are inherently ambiguous.

²⁶ See Daniel H. Cole & Peter Z. Grossman, *When is Command-and-Control Efficient? Institutions, Technology, and the Comparative Efficiency of Alternative Regulatory Regimes for Environmental Protection*, 1999 WISC. L. REV. 887, 895 (stating that the authorities chose a quota system from emissions early in the process).

²⁷ Companies can challenge a regulation in court on several theories, both substantive and procedural. Such challenges often include vagueness, overbreadth, unreasonableness, and agency scope of authority.

²⁸ See Sunstein, *supra* note 23, at 627 (criticizing command and control regulation as “involv[ing] the creation of poor incentives”).

²⁹ *Id.* However, it is important to note that some scholars dispute the notion that command and control regulation lacks in dynamic efficiency. Command and control’s ability to encourage innovation is an open debate with strong arguments on both sides of the issue. The notion that command and control regulations are inconsistent with innovation is in no respect a foregone conclusion. See generally David M. Driesen, *Is Emissions Trading an Economic Incentive Program?: Replacing the Command and Control Economic Incentive Dichotomy*, 55 WASH. & LEE L. REV. 289, 304 (1998); Timothy F. Malloy, *Regulating by Incentives: Myths, Models, and Micromarkets*, 80 TEX. L. REV. 531, 542-45 (2002).

³⁰ Command and control does not offer any incentive for a company to innovate because such regulation fails to reward or differentiate in the company that narrowly complies from the one that goes the extra mile. See Sunstein, *supra* note 23, at 607, 628 (providing that BAT “requirements punish [innovating] companies for their development of new control technology, rather than rewarding them”).

³¹ See *id.* at 629 (“[R]egulation that requires BAT actually discourages technological development.”).

³² See Cole & Grossman, *supra* note 26, at 924 (suggesting that costs of adopting alternative approaches do not exceed the benefits). In fact, the Clean Air Act, 42 U.S.C. §§ 7401-7671 (2006), gives companies the option of either installing the best available technology or designing an alternative method to reduce pollution to the same level as that of the best available technology. The vast majority of companies choose to install the best available technology. Cole & Grossman, *supra* note 26, at 924.

government does not discover that the governmental standards are actually too low.³³

Enforcing command and control regulations is influenced by a number of factors. Enforceability under command and control decreases as the complexity of the regulation increases.³⁴ Enforceability also decreases as the complexity of the entity structure increases.³⁵ Further, enforceability decreases as companies focus on the “real law” and ignore the “statutory law.”³⁶ Enforceability may also decrease as companies utilize “willful noncompliance” to ambiguous and fuzzy regulations.³⁷ Thus, command and control regulations are easy to enforce for clear and simple matters, but difficult to enforce for complex matters. This makes command and control an optimal regulation for clear cut rules that can quickly be inspected to look for a violation.³⁸ By contrast, command and control is not optimal for broad, complex regulations that are in opposition to the interest of the company.³⁹ The underlying assumption of enforceability under command and control regulations is that corporations are rational actors that would choose to comply to avoid a fine, but this assumption is flawed because it rejects the substantiated “resource-allocation” model of firm behavior.⁴⁰

³³ Command and control can have the effect of making industries oppose regulation in order to avoid the cost of updating with newer technology that is more efficient. *See* Sunstein, *supra* note 23, at 628, (“Under the BAT approach, a company that innovates in this area will simply have to invest more in pollution control.”).

³⁴ Enforceability varies inversely with complexity in the command and control regulation context.

³⁵ Today, corporations are utilizing increasingly complex entity structure to avoid liability. Corporations set up several subsidiaries to form a large corporate family. The corporations carefully follow corporate formalities and invest only a small amount of money in each subsidiary. Generally only the subsidiary that acted can be held liable since courts stretch to respect entity structure in the absence of demonstrating neglect to follow corporate formalities and bad faith resulting in injustice. *See, e.g.,* *United States v. Bestfoods*, 524 U.S. 51, 61 (1998). In *Bestfoods*, the same individuals were officers and directors of both the corporation and the subsidiary. *Id.* at 56-58. The Court created a rebuttable presumption that directors always act on behalf of the subsidiary. *Id.* at 61. Additionally, clever corporate structuring can be used to completely avoid a regulation. Hence, the situation is often that corporations have structured around regulations as well as immunized themselves from any penalty in the event they fall under the regulation.

³⁶ This means that companies evaluate their actions with knowledge of how the law is actually enforced, taking into account the chances of actually getting caught. Risk management applied in this context often works to the company’s advantage. This concept is illustrated by the common occurrence in major cities whereby the speed limit is 60 mph but the flow of traffic is 80 mph. It is common knowledge that certain command and control regulations are not enforced, making them merely statutory law.

³⁷ Willful noncompliance occurs when companies seek to utilize regulatory ambiguity to their advantage. If a legitimate argument exists for why a company’s actions do not violate the regulation, then the company may not comply, even if such action goes against the legal policies. Broad and complex regulations are usually vague, which leads to ambiguity. The ambiguity leads to willful noncompliance.

³⁸ A good example of a simple regulation is the requirement that automobile manufacturers install seat belts. If a manufacturer fails to comply, an inspector can just look through the window of the car in a matter of seconds to notice the car lacks seatbelts. The inspector can then look at the back of the car to see who manufactured it. Fines can be swiftly and precisely issued because there is a clear actor and a clear violator.

³⁹ Complex regulations are often difficult to enforce. It is often difficult to demonstrate noncompliance for substantive complex civil violations because the complexity provides substantial room to argue no violation occurred. Also, if the regulation has a criminal liability component, demonstrating the company “knowingly” violated the regulation is even more difficult.

⁴⁰ *See* Malloy, *supra* note 29, at 565 (observing that the resource allocation model is superior to the traditional black box model for building social regulation because it takes into account the ways that corporations actually function in practice).

In sum, fairness is a strength of command and control regulations, whereas dynamic efficiency is a weakness of command and control regulation. Enforceability is a weakness for command and control when a complex regulation with ambiguity is enforced against a complex entity that does not favor the regulation.

B. Market-Based Incentives as Regulation

Market-based regulation operates on the assumption that rewarding positive actions exceeds the advantages of penalizing negative actions.⁴¹ These regulations reward companies for compliance instead of penalizing companies for noncompliance.⁴² Market-based regulations often attempt to create a free market so companies that fully comply with regulations receive a profit while those companies who fail to comply with regulations, or only marginally comply, lose an opportunity to earn additional revenue. Market-based regulations recognize the power of the profit motive that drives free markets and seek to employ it as a device to aid governmental regulations and increase social good.⁴³ Indeed, market forces, which utilize profit motive, can act as very powerful incentives.⁴⁴ In the environmental context, emissions trading programs are a prime example of a market-based regulation that utilizes the free market to reward companies that pollute less with more profits.⁴⁵

Fairness is a strength of market-based regulations, when viewed from the companies' perspective.⁴⁶ Companies are all given a chance to utilize the market to increase their profit. Companies are not being compelled to act in a way that they oppose. They are not generally penalized for their inactions; rather, they are rewarded for their actions. Thus, unlike traditional regulation, companies retain more freedom to set their own standards.⁴⁷ Companies are accustomed to competition in the free market. This type of regulation allows the free market to continue, but the competition advances regulatory goals.⁴⁸ Thus, market-based

⁴¹ See generally B. F. SKINNER, *CONTINGENCIES OF REINFORCEMENT: THEORETICAL ANALYSIS* (1969). The notion that positive reinforcement is more effective than negative reinforcement is well documented by the field of social psychology.

⁴² See Malloy, *supra* note 29, at 531 (“[Market-based regulations] typically create an opportunity rather than (or in addition to) an obligation, offering the positive incentive of increased profits”); see also Sunstein, *supra* note 23, at 635 (“[T]his system would reward rather than punish”).

⁴³ See generally DAVID SAPPINGTON & DENNIS WEISMAN, *DESIGNING INCENTIVE REGULATION FOR THE TELECOMMUNICATIONS INDUSTRY* (1996) (observing that many states, foreign countries, and the FCC have moved toward incentive-based regulations in the telecommunications industry).

⁴⁴ See generally MICHAEL COX, *MYTHS OF RICH AND POOR* (1999) (documenting the power of free markets and the critical role they play in the American economy, Dr. Cox argues that free markets are stronger than governmental regulation and demonstrates several situations in which free markets solved dilemmas that governmental regulation failed to solve).

⁴⁵ See Robert W. Hahn & Gordon L. Hester, *Where Did All the Market Go? An Analysis of EPA's Emissions Trading Program*, 6 *YALE J. ON REG.* 109, 110-11 (1989) (observing that under emissions trading, permits allowing pollution are sold among companies at the fair market value).

⁴⁶ See generally Bruce A. Ackerman & Richard B. Stewart, *Reforming Environmental Law: The Democratic Case for Market Incentives*, 13 *COLUM. J. ENVTL. L.* 171, 172 (1988) (arguing that market incentives in environmental regulation are more democratic because they give the parties involve more choices).

⁴⁷ *Id.* at 180.

⁴⁸ *Id.* at 182-83.

regulations are as “fair” as the free market itself.

On the other hand, fairness can be a weakness of market-based regulations, when viewed from a third party perspective.⁴⁹ For example, market-based emission trading programs often result in hot spots or specific areas where the amount of pollutant increases as a direct result of the emissions trading program.⁵⁰ Thus, individuals residing in effected areas receive no benefit from the innovation and profit resulting from market-based regulations; rather, their quality of life decreases as a result.⁵¹

Fairness to the company and to third parties are both important concerns. However, fairness to a third party outweighs fairness to the company on issues that relate to public safety and public health. It is far better to maintain an environment that is safe for individual citizens than to permit injuries to members of the public in order to treat a company fairly. Thus, unless market-based incentives unjustly harm third parties, they are fair to both the company and the third party who may indirectly benefit from such market incentives.

Dynamic efficiency is generally a great strength of market-based regulation.⁵² Just as profit motive creates innovation in the corporate marketplace, profit motive can spur innovation in the regulatory marketplace. Incentive-based regulations utilize free markets.⁵³ Free markets, in turn, encourage innovation and give companies a desire to innovate and utilize creativity.⁵⁴ This type of regulation differentiates the company that narrowly follows a regulation from the company that goes the extra mile, as it rewards the company that goes the extra mile with greater profits.⁵⁵ Therefore, when incentive-based regulations are utilized, many companies are willing to go the extra mile.⁵⁶ In the environmental context, incentive-based regulations encourage companies to innovate by finding way to reduce pollution in order to increase their profits.⁵⁷ Companies reap financial rewards by polluting less and pay to pollute more.⁵⁸ Thus, companies have a financial motive to innovate to

⁴⁹ Watch out for the iron fist behind the invisible hand of capitalism. Indeed, the invisible hand of capitalism (and free markets) often refuses to “lend a hand” to those who need it most and can be rather unsympathetic to third parties not aiding in increasing company profit.

⁵⁰ Stewart, *supra* note 16, at 547-48, 550.

⁵¹ *Id.*

⁵² See *id.* at 554 (“[M]arket based mechanism[s] spur creativity and innovation.”).

⁵³ *Id.*

⁵⁴ See COX, *supra* note 44, at 157-78 (observing that free markets greatly aid in technological advancement).

⁵⁵ Of course, companies often have to innovate to go the extra mile. Since companies are financially rewarded for going the extra mile, they are much more likely to innovate to travel the extra mile. See, e.g., Stewart, *supra* note 16, at 554.

⁵⁶ While theoretically sound, this point is disputed in the literature by those who focus on the way companies actually operate in the real world. Nevertheless, in theory, incentive-based regulations create competition among companies, which leads to innovation. Thus, arguably some actual companies will adhere to the theory, but certainly not all. See, e.g., Malloy, *supra* note 29, at 535 (observing that the black box model of the company as a rational entity that operates only based on profit-loss calculations is flawed because it fails to take into account the reality that companies are composed of a variety of individuals who make decisions). Indeed, it is indisputable that entities are not truly “legal persons,” but rather an aggregate of individuals.

⁵⁷ See MARKET-BASED GOVERNANCE 173-200 (John D. Donahue & Joseph S. Nye eds., 2002).

⁵⁸ Innovation is profitable because companies that innovate to pollute less receive money from the market. *Id.*

reduce pollution.⁵⁹ Instead of trying to keep the best available technology primitive to avoid traditional regulations, companies seek to advance technology so they can reduce pollution and profit from the reduction.⁶⁰ Emission trading aligns the government's interest with the interest of the private sector.⁶¹ Thus, market-based incentives encourage innovation.⁶²

Enforceability is a strength of market-based regulations for two reasons. First, it is profitable and advantageous for companies to follow the regulations.⁶³ Second, market-based regulations eliminate most of the traditional reasons for noncompliance.⁶⁴ Indeed, for complex regulations with broad aims, incentive-based regulations are ideal.⁶⁵ These regulations are also ideal in the global economy when the regulations seek to regulate on an international level.⁶⁶ Since the market is the effective enforcer, it is critical that a market-based regulation be carefully designed so that the market forces point in the same direction as the goal of the regulation. Otherwise, the market will pull the business away from the aim of the regulation.⁶⁷ Also, these regulations must not contain substantial restrictions that undermine the market.

⁵⁹ In other words, market-based regulations provide the incentives for companies to innovate. *See supra* notes 50-54 and accompanying text.

⁶⁰ MARKET-BASED GOVERNANCE, *supra* note 57.

⁶¹ Market-based regulations align the interests of the regulator and the regulated, even though motives differ. Traditional regulation, by contrast, often puts the regulator in direct conflict with the regulated.

⁶² Most businesses aim to engage in profitable activities and avoid revenue losing activities. Incentive-based regulations create an opportunity for companies to generate a profit, which is the aim of business. By contrast, traditional regulations merely create an opportunity for businesses to lose revenues. Thus, since businesses can utilize market-based regulations to earn a profit, it is consistent with economic theory that businesses will view them positively and innovate to make the market-based regulations generate profit.

⁶³ In theory, the free market enforces the incentive-based regulation. Profit motive enforces the incentive-based regulation. Companies are rewarded for following incentive-based regulations. Thus, theoretically less monitoring is required by the government. Since it is arguably in the company's interest to comply with the regulation, noncompliance is not as significant of a problem as under command and control regulation, at least according to economic theory. This type of regulation should turn compliance into a positive, instead of a negative. Thus, according to theory, free market forces make it so that the number of companies that eagerly comply with profitable market-based regulations exceeds the number of companies that would comply with burdensome command and control regulations.

⁶⁴ For example, this type of regulation sometimes reduces willful noncompliance. Since the regulation can benefit the company, companies, in certain circumstances, no longer desire to use the grey area in the regulation to undermine it. Companies generally seek to avoid or undermine regulations because they view regulations as burdens that gets in the way of business. Since the market-based regulation is not necessarily a negative, companies are not as motivated to find ways around the regulation or only follow strictly-enforced regulations. On the other hand, if there is no cost efficient or cheap way to comply with the market-based regulation, companies will seek to violate the regulation.

⁶⁵ Complex regulations are difficult to enforce and to prove violations. Therefore, the best way to get companies to comply is to align the companies' interest with the regulation: *i.e.*, make compliance a profitable endeavor that benefits the company. Since companies profit from regulations that they could probably otherwise violate with only minimum risk of detection, market-based regulations are ideal for complex regulations.

⁶⁶ *See generally* RALPH C. BRYANT, *TURBULENT WATERS: CROSS-BORDER FINANCE AND INTERNATIONAL GOVERNANCE* (2003) (observing that incentive-based regulations operate indirectly so they are less costly and ideal for situations encountered in the global economy).

⁶⁷ The driving force is the market, not the regulatory goal.

Market-based regulations are often fair, efficient, and enforceable.⁶⁸ However, they are not effective in every context.⁶⁹ If there is a lack of supply or demand, or no common goals among companies within a given market, market-based regulations will not succeed.⁷⁰ For market-based regulations to function properly they must be carefully designed and the conditions must exist that make them excel.⁷¹

C. Information Disclosure as Regulation

Information disclosure mandates that key information be disclosed to the potential consumer, customer, or user. Information disclosure requirements cover a broad array of legal fields including tax law, securities law, environmental law, health law, and products liability law. Information disclosure requirements commonly appear in the form of warnings on prescription drug bottles and nutrition fact labels on food products.

The goals of information disclosure are to inform the consumer and to positively change the behavior of the organization required to disclose the information. Information disclosure allows the consumer to make an informed choice when provided with reasonably reliable information that is materially relevant to the choice at hand.⁷² An organization modifies its behavior in light of the way potential consumers will react when they comprehend the information.⁷³ Often, organizations will avoid a behavior they otherwise would engage in simply to avoid disclosure. Thus, information disclosure policies enable the consumer to make wise decisions and encourage the organization to act outside the cloak of secrecy.

Fairness is a strength of information disclosure regulations because they require companies to be honest with themselves and the public at large. Information disclosure requires companies to be fully knowledgeable of the products or services they place on the market. It also allows the individual consumer, armed with pertinent information fully disclosed, to weigh the advantages and disadvantages of the products or services in light of his personal values. Some companies contend

⁶⁸ See Ackerman & Stewart, *supra* note 46; see also *supra* text accompanying note 46.

⁶⁹ See Sunstein, *supra* note 23, at 645 (observing that regulatory programs should take advantage of market forces only “where these can be harnessed to promote regulatory goals”).

⁷⁰ For example, substantial differences between companies in the same industry can preclude trade.

⁷¹ Some industries are such that effective markets that flow in the same direction as regulatory goals are not possible to design. Market-based incentives have worked well in the environmental context because high levels of pollution are not desired by companies or the government. Pollution is a byproduct that itself does not benefit companies. Market-based regulations would not work where the product from which the company profits is the very product the regulator seeks to reduce. For example, if there is high demand for fast cars with low fuel efficiency, the government could not encourage the sale of slow cars with high fuel efficiency by rewarding companies who sell them. The profit to be made from the demand for the former would exceed the reward from the latter. Market-based regulations are powerful, but only where they can be properly utilized.

⁷² Information disclosure functioning to inform the consumer is particularly important for inherently dangerous products and activities, where injury is a real possibility for some consumers. A common example is individuals who take prescription drugs. A small number of people who ingest a “safe” drug will be seriously injured.

⁷³ See Timothy Malloy, *Disclosure Stories*, 32 FLA. ST. U.L. REV. 617, 619 (2005) (describing three major functional mechanisms of information disclosure). There is a reflexive effect (organization changes its behavior based on self-awareness acquired during collection process) and a deterrent effect (organization changes behavior simply to avoid having to disclose the information). *Id.* Also, there is an enhancement effect. *Id.*

that the information collection process is overly burdensome, invasive, unnecessary, and deters business.⁷⁴ However, this burden is often substantially outweighed by the benefits that disclosure policies bring to the public.⁷⁵ In many situations, the benefits of disclosure exceed the costs.⁷⁶ The free market works best when both parties are fully informed.⁷⁷ It is fair to aid in this process. Thus, information disclosure policies are fair because it is just and reasonable to require that both parties know the critical information and material facts about a product or service. The company can objectively evaluate the decision to sell the product or service, and the consumer can objectively evaluate the decision to buy the product or service.

Dynamic efficiency is a strength of information disclosure policies because companies are discouraged from merely using propaganda to mislead the public. As a result, companies tend to modify or improve their product to meet the minimum threshold for marketability, as opposed to using propaganda to deceive consumers about the quality of a substandard product. Information disclosure encourages companies to actually place their products and services at the quality level they desire rather than devise a method to give the appearance that such products and services are at the desired level. Since information disclosure places the “true facts” about a product or service on the table, companies are motivated to devote more resources towards innovation and fewer resources towards propaganda.⁷⁸ Thus, information disclosure is dynamically efficient because it allows a product or service to be objectively evaluated, and the best way to improve the objective evaluation is to improve the product or service.

Enforceability is a weak point of information disclosure because it relies on the assumption that companies will disclose truthful information that is materially relevant to consumer choice. However, companies often fail to do so. Since the government or another agency cannot independently verify all of the information submitted, some companies can and will misstate information.⁷⁹ These companies may make a misstatement with intent to deceive the public, or the misstatement may merely be a product of overconfidence.⁸⁰ By the time the misstatement is

⁷⁴ See, e.g., Neil Richards, *Reconciling Data Privacy and the First Amendment*, 52 UCLA L. REV. 1149, 1182-86 (2005).

⁷⁵ See Louis Lowenstein, *Financial Transparency and Corporate Governance*, 96 COLUM. L. REV. 1335, 1342-45 (1996) (noting information disclosure induces managers to manage better). Information disclosure is valid because the public benefits from knowledge; the company's burden is offset by highly focused managers.

⁷⁶ Of course, there are exceptions to the cost-benefit generalization that the benefits of information disclosure exceed the costs. In any situation, cost-benefit analysis requires that the actual benefit be weighed against the actual cost. Nevertheless, because of the numerous benefits that result from information disclosure, the generalization that the benefits of information disclosure often substantially outweigh any cost a company incurs from disclosing holds true in many situations.

⁷⁷ Transactions should be based on reliable knowledge, not misinformation.

⁷⁸ In other words, since information disclosure allows potential consumers to evaluate a product based on the merits, companies seek to innovate to improve the product's actual merits to increase marketability.

⁷⁹ Perhaps consumers should be informed that the information contained in the disclosure was obtained directly from the company.

⁸⁰ See Donald Langevoort, *Organized Illusions: A Behavioral Theory of Why Corporations Mislead Stock Market Investors*, 146 U. PA. L. REV. 101, 139 (1997) (observing that corporate misstatements of information are not always intentional but can result from misperception due to overoptimism and self-serving beliefs).

discovered, serious injury may have already occurred.⁸¹ Also, as information becomes increasingly detrimental, the pressure to misstate information increases simultaneously with the value of the information to the public.⁸² Thus, the information critical to public choice will probably be the very information that is not fully disclosed or is misstated. Many consumers may be injured before the misstatement is discovered, if it is ever discovered at all.

Information disclosure is fair and dynamically efficient. However, enforceability of information disclosure policies are difficult, particularly when critical information detrimental to the company is involved. Information disclosure alone is generally not sufficient to regulate an industry. Information disclosure does not suffice in situations where the individual has no choice.⁸³ Also, information disclosure should not be used to justify forcing unreasonable choices upon individuals.⁸⁴ Excluding situations in which the critical element is limited to an informed personal choice, information disclosure alone is generally inadequate. Instead, information disclosure is helpful as a supplement to additional regulations. However, information disclosure regulation is excellent in situations where personal choice is pivotal, meaning the product or service is “reasonable” to some individuals while “unreasonable” to others. In such situations the main concern is that the person making the choice has adequate and accurate information on which to rely.

D. Management-Based Regulation

Management-based regulations are a relatively new technique utilized to regulate businesses. Under management-based regulation, the business designates an office or division specifically designed to address a particular problem or type of problem.⁸⁵ This approach takes into account the wide variety of businesses. Central to management-based regulation is the understanding that there is not a one-size-fits-all approach to the regulation of businesses. Management-based regulation keeps businesses focused on an issue, yet also gives them flexibility to design custom

⁸¹ See MARSHALL CLINARD & PETER YEAGER, *CORPORATE CRIME* (2006) (providing a comprehensive study of corporate crime that documents crime of large corporations including Enron, Worldcom, and Arthur Anderson, and illustrates that corporate crimes are often discovered after individuals are already damaged).

⁸² See CHRISTOPHER STONE, *WHERE THE LAW ENDS* (1975) (observing that a delay in the recall of a drug with harmful side effects could allow a drug manufacturer to make several million dollars in profits).

⁸³ Compare the warnings on cigarettes to a workplace that contains asbestos. In the former, the person can choose to smoke or not to smoke. In the latter, a person often cannot choose not to work at a certain company for financial reasons. Thus, it would be unjust to require that companies merely inform employees of the presence of asbestos since most employees lack the ability to freely make a reasonable choice about whether to accept such a working condition or leave.

⁸⁴ Information disclosure should never function as justification for companies to engage in unreasonable conduct harmful to public good merely because they informed the public of such conduct. For example, it would be unjust to allow a company to heavily pollute a residential area merely because the company informed the residents that it was doing so, and can thus argue that the residents are fully informed and free to leave the area if they choose.

⁸⁵ See EUGENE BARDACH & ROBERT KAGAN, *GOING BY THE BOOK* (1982) (observing that these regulations require businesses to engage in internal action and planning geared toward achieving specific goals).

solutions to dilemmas.⁸⁶ Further, this approach can be classified as structural in that it essentially requires a business to design a structure within the entity that utilizes personnel to meet specific goals or solve specific problems.⁸⁷ An underlying assumption of this approach is that often a business fails to adequately address a problem simply because it does not focus attention on the problem; once the problem catches the attention of the business, the business is in the best position to design a solution.

Fairness is a weakness of management-based regulations when viewed from the perspective of the business. It is inconsistent with free enterprise to require a business to devote its human capital to solving a problem that the organization feels does not justify the use of such human capital. Under a market-based theory, the allocation of human capital within an organization should generally remain at the sole discretion of the organization. The management-based approach to regulation comes too close to the government functioning as a micromanager, attempting to design the organizational structure of private businesses. Organizational structure choices within a private entity should be solely within the discretion of that entity.

Yet, fairness is a strength of management-based regulations when viewed from the perspective of a third party. Often, structural problems within a business harm third parties more than those who operate the business. Businesses may not benefit from their oversight, but clients may suffer from a lack of oversight. This result is unfair to the third party. Therefore, management-based regulations are fair to third parties because these regulations help protect third parties from injury caused by the poor structural design of an organizational chain of authority or management hierarchy in a business.⁸⁸

Fairness to the third party is a significant interest that should outweigh the concern of fairness to the business when the health, safety, or financial well-being of the public is at stake. Otherwise, the autonomy of a business overrides the fairness to third parties who have relations with the business because of the long-standing tradition that business is governed by the private sector and run by individual citizens with minimal government interference. A basic premise of a free market economy is that individuals run private businesses while the government provides public goods and performs a regulatory role where appropriate, rather than the government dictating the methods and structures that private businesses should follow.⁸⁹ Business autonomy should only be disregarded to serve the critically important need of protecting the public from serious injury.⁹⁰ Thus, fairness is a weakness of management-based regulation, unless such regulation is needed to protect public health or safety.

Dynamic efficiency is a strength of management-based regulation. Although

⁸⁶ See Cary Coglianese & David Lazer, *Management-Based Regulation: Prescribing Private Management to Achieve Public Goals*, 37 LAW & SOC'Y REV. 691, 702 (2003) ("Management-based regulation gives firms flexibility in developing their own plans for achieving the goal.").

⁸⁷ See *id.* ("Management-based regulation requires firms to engage in internal actions that the regulator hopes will lead to improved private management of issues with social ramifications.").

⁸⁸ One way to view management-based regulation is that it helps a business better accomplish its stated goal of serving the customer or client.

⁸⁹ See generally ADAM SMITH, THE WEALTH OF NATIONS (Dent 1910) (1776) (arguing government restrictions damage industry which in turn hurt the economy in the long run).

⁹⁰ WILLIAM LAZONICK, BUSINESS ORGANIZATION AND THE MYTH OF THE MARKET ECONOMY (1991).

innovation often comes from creativity and insight, it can also come from focusing on a problem and spending time to craft a solution.⁹¹ Since management-based regulations seek to solve problems that often occur because of a lack of focus, this type of regulation promotes innovation in the context of the problems it seeks to address. Innovation in this arena results from acknowledging a problem and spending the time to create a solution.⁹² Since management-based regulations force companies to acknowledge certain problems, innovation occurs in crafting solutions to resolve problems that otherwise would not have been addressed.

Enforceability is a weakness of management-based regulation.⁹³ A business can ignore the recommendations of the division that the business created to address a problem. Further, a business can under staff or incompetently staff the division, or it can hire individuals that will do nothing more than rubber stamp the regulation. Management-based regulation operates on a goodwill assumption.⁹⁴ Because businesses are the ultimate enforcers of an effective and innovative management-based regulation, such regulation should not be used when it promotes goals that are adverse to the businesses involved. These regulations are ideal when what they seek to accomplish is neither adverse to the business nor is of any benefit to the business.⁹⁵

Ultimately, management-based regulations are often unfair and difficult to enforce. Nevertheless, they are dynamically efficient. If correctly applied, management-based regulations have much potential in certain situations.

The four regulatory methods each have advantages and disadvantages, pros and cons, and strengths and weaknesses. All four are viable and acceptable methods to regulate an industry, and are worthy of consideration. No single method of business regulation is so desirable that it should always be utilized in every instance, nor is any method of regulation so oppressive that it should automatically be rejected.

III. APPLICATION OF REGULATION TO AMUSEMENT PARKS

The “best” type of regulation is the regulation that is best suited to address a specific type of harm. This section matches the varying types of regulation to the different types of harm within the amusement park industry. Recall, the three major dilemmas that confront the amusement park industry are design defects, construction problems, and maintenance problems.⁹⁶ The four types of business regulation are command and control, incentive based regulation, information disclosure regulation, and market-based regulation. This section illustrates that in the amusement park

⁹¹ Conversely, it is virtually certain that no innovation will emerge from completely ignoring a problem.

⁹² See CHRISTOPHER STONE, *WHERE THE LAW ENDS* (1975) (observing that the undesirable conduct of a firm is sometimes the result of the firm’s inadequate structural design, which can be corrected through structural approaches).

⁹³ See Coglianese & Lazer, *supra* note 86, at 711, 726 (observing that management-based regulations “will succeed only if government is capable of sufficiently increasing their magnitude . . . either by increasing the probability of detecting noncompliance or by increasing the adverse consequences for noncompliance”). Coglianese and Lazer also observe that enforcement of management-based regulations is difficult because “good management” is very difficult to define. *Id.*

⁹⁴ The assumption is that businesses desire to fix the problems brought to their attention.

⁹⁵ In other words, such regulations are ideal to address problems that are off the radar screen of the business.

⁹⁶ See *supra* notes 5-9 for a general description of these problems that confront this industry.

context, information disclosure is the best method of regulation for design defects, command and control is best for construction problems, and management-based regulation is best for maintenance problems. Market-based regulations should be utilized to encourage safety innovation. Additionally, this section evaluates the effectiveness of each method of regulation as applied to the unique problems confronted by the amusement park industry. The proposed method of how to regulate the amusement park industry demonstrates the necessity of selecting a regulation that best fits the specific type of harm rather than relying on a generalization about which type of regulation is always the best.⁹⁷

A. Command and Control Corrects Construction Problems

Command and control regulation can aid in the worthy goal of increasing amusement park safety, as this type of regulation is well suited to resolve certain construction problems that confront amusement parks. Serious injuries resulting from construction problems can be reduced to minor mishaps with the use of command and control regulations.

A major construction problem can arise when electronic restraints are properly designed, but improperly assembled during the construction of a ride, resulting in an occupant of the ride being ejected while the ride is in motion. Command and control regulation should mandate that all electronic restraints be reinforced with manual restraints.⁹⁸ This regulation could prevent a person from falling out of a ride because an improperly assembled electronic restraint fails. Thus, a manual restraint requirement, which can act as a redundant safety measure, is a regulation that can potentially save lives and cost the amusement park industry very little.⁹⁹

Further, the requirement that manual restraints reinforce electronic restraints is straightforward and quickly ascertainable. An inspector could glance at a ride and in a matter of seconds determine if the electronic restraints on the ride are reinforced with manual restraints. Also, the burden of installing manual restraints would be *de minimus*, since they are easy to install and relatively inexpensive. The minimal expense involved would provoke little, if any, opposition from the amusement park industry. Therefore, command and control is ideal because the regulation is relatively clear, parks would not oppose the requirement, and compliance can be determined quickly and easily in most cases.

Additionally, command and control regulation is ideal to address some other issues that confront the amusement park industry. This type of regulation can establish mandatory procedures that parks must follow in the event of an accident on

⁹⁷ Crafting regulations requires both knowledge of regulatory methods and knowledge of the particular industry. There is a tendency to generalize that a regulation that works well in one context will work well in another. However, this generalization is inadequate because the success of a method of regulation depends more upon the problem that it addresses than upon the individual strengths of that regulatory method. Thus, the reasonable regulator should aim to match the type of regulation to the problem rather than trying to find a strong method of regulation that works in every context.

⁹⁸ This is an example of a construction problem, not a design defect. Electronic restraints on rides are adequately designed to hold people in the ride. However, if the ride is assembled incorrectly, or a computer glitch occurs, then electronic restraint may not function. Thus, in theory, electronic restraints are well-designed. In practice, because of construction problems and wear-tear problems, they sometimes fail.

⁹⁹ The procedure is often as simple as using a seat belt to secure the electronic restraint.

a ride to ensure that guests receive medical attention and that the accident is reported.¹⁰⁰ Command and control regulation should give the federal government authority to investigate such accidents and mandate that the amusement park fully comply with the investigation or face a fine.¹⁰¹ Command and control regulation should establish minimum height and weight requirements for each ride and set minimum qualifications for ride operators.¹⁰²

Command and control is ideal for addressing construction defects as well as a few other concrete issues.¹⁰³ However, this regulation alone is not adequate to regulate the entire amusement park industry.¹⁰⁴ This, in part, is due to the complex nature of certain aspects of amusement park regulations concerning ride safety.¹⁰⁵ Command and control regulation can certainly aid in the regulation of amusement parks by addressing specific problems that are within its scope of effective regulation. However, other issues that confront the industry are better regulated by other methods.

Finally, command and control is a very effective method of regulation to address the specific problems noted because it can easily be implemented and is likely to change behavior.¹⁰⁶ The standards can be approved and put into use in a short period of time. Since compliance is rather easy, it is unlikely that amusement parks will resist the regulations. For example, the task of installing manual restraints on all rides to reinforce electronic restraints is quick, cheap, and easy to very. Thus, the command and control regulation can be implemented with ease and will likely be followed by amusement parks. Effectiveness is a great strength of command and control to address the specific problems of construction defects and, additionally, the method by which parks must respond to accidents.

¹⁰⁰ For example, for all "accidents" at the amusement park in which medical attention is required or a request is made for medical attention after an accident, medical attention must be provided to the guest and all accidents reported to the CPSC every six months. Of course, the latter part (reporting to the CPSC) is actually an example of information disclosure that supplements the command and control regulation.

¹⁰¹ This would motivate parks to take measures to avoid accidents, as federal agents on the scene attract media, not customers.

¹⁰² At a minimum, the regulation could mandate that each ride operator pass a written exam on ride safety. This would ensure ride operators have at least some knowledge of ride safety.

¹⁰³ This is not intended to suggest that other methods of regulation are ill-suited; rather, command and control is ideal for the particular problems mentioned. It would not be unreasonable to use other methods in addition to the ideal method to further the goal of correcting the problem.

¹⁰⁴ The goal is the design and use of safe rides. Command and control does not provide incentives for the use and design of safer rides. Rather, it implements some measures that can reduce, but not eliminate, injuries that occur for specific reasons. A command and control regulation that limited the maximum G-force level on a ride would not be possible for two reasons. First, different people respond differently to force, so there is no clear line between "safe" and "dangerous" G-force levels. Second, high G-force levels attract riders.

¹⁰⁵ For example, it would not be feasible to establish a G-force level that is unreasonably dangerous because of the many other factors that correlate with whether or not a given level of G-force is safe, such as the direction components of the force. A small level of G-force can be more harmful than a larger level, depending on the direction components and other factors that effect safety.

¹⁰⁶ In other words, effectiveness is defined by the following two criteria: implementability and workability.

B. Market-Based Regulations Spur Safety Innovation

Market-based regulations are not the most effective regulation to police the amusement park industry.¹⁰⁷ In this context, market-based regulations are in *direct* opposition with market forces.¹⁰⁸ While any regulation type, including the market-based regulation, is in opposition to market forces at some level, the free market's pull away from compliance is particularly strong within in the amusement park context. As a result, there is no reasonable way to broadly utilize market-based regulations to make compliance more cost-effective.¹⁰⁹ Nevertheless, market-based regulations can aid in amusement park safety when narrowly applied and carefully and creatively crafted.

Market-based regulations can be used to encourage parks to make dangerous rides less dangerous.¹¹⁰ Market forces clearly push amusement parks towards making faster rides that generate higher levels of forces since such rides are what attract customers.¹¹¹ In other words, since fast rides attract customers to parks, it is the fast rides that generate higher revenues. However, these rides often cost about \$30,000,000 for a park to purchase.¹¹² Since taxes are an issue in these transactions, the government should reward manufacturers who create substantially safer rides with lower tax rates.¹¹³ The government should also reward amusement parks that purchase a ride that has been innovated towards safety with lower tax rates on any transaction relating to the ride.¹¹⁴ The purpose of the tax benefit is to encourage companies to incorporate safety into the rollercoaster "arms race." Manufacturers seeking the tax benefit would innovate to make the high force rides safer. Amusement parks seeking the tax benefit would purchase rides that were innovated under safety considerations. In such a scenario, market-based incentives positively reward safety.

Of course, a tax-based reward involves a large cost, namely the value of the foregone tax dollars. Indeed, this could be viewed as a very expensive regulation for the public. Therefore, it should only be used if it is superior to other regulations that

¹⁰⁷ By contrast, in the environmental context market-based regulations are broadly desirable and workable.

¹⁰⁸ Fast rides with high G-force levels may attract thrill-seeking riders, but those same G-force levels can kill or seriously injure other riders who are more susceptible to harm from such force levels. The very characteristic that attracts people to an amusement park is also the reason that parks can be harmful. Any economic gain received as a result of selecting or designing safe rides is substantially outweighed by the profit to be made from fast but dangerous rides. In other words, a park that installs only slow and safe rides will be an empty park that is not competitive in the market. This is a loss in incentives that cannot be overcome.

¹⁰⁹ In the amusement park context, unlike the environmental context, there appears to be no common commodity to trade among parks. Thus, markets are hard to create since there are no credits to sell or purchase.

¹¹⁰ Safe rides are the ideal, not less dangerous rides. Nevertheless, any reduction in danger is still worthwhile.

¹¹¹ There is currently an "arms race" in the roller coaster industry, creating employment for elite scientists.

¹¹² For example, Kingda Ka, a new ride at Six Flags Great Adventure, cost \$25,000,000 for the park to purchase. Wikipedia, Kingda Ka, http://en.wikipedia.org/wiki/Kingda_Ka (last visited Jan. 2, 2009).

¹¹³ Examples of ride safety innovation might include types of restraints that reduce rapid head movement on a ride or coverings that reduce the adverse effects of high force levels. Akin to airbags and seat belts, structural changes can be made to the ride's passenger compartment to increase safety.

¹¹⁴ Given the size of the transaction, tax savings translate into a large sum of money.

could be implemented at a lower cost.¹¹⁵ However, any loss suffered by the national economy would be relatively small and virtually unnoticeable from a fiscal policy perspective. Since safety is an extremely compelling concern, the relatively small loss from a fiscal perspective could be a very large gain in terms of fewer injuries.

Market-based regulation, as described above, should be implemented to issue lower tax rates to those who encourage safety innovation because this rewards positive action with more profit.¹¹⁶ Currently, companies that seek to innovate in the area of ride safety seem to lose money because they are not financially rewarded for their efforts, but instead must pay for the safety research.¹¹⁷ Since safety is a very important concern for public policy reasons, market-based regulations should be crafted to reward safety innovation. Furthermore, market forces pushing for safety innovation in amusement park rides might lead to safety innovation elsewhere.¹¹⁸

In terms of effectiveness, a market-based incentive regulation that promotes safety innovation can only be effective if it can be implemented properly. Implementability is the greatest challenge this regulation faces. Since it relates to fiscal policy and authorizes a tax cut, the regulation would likely require the approval of Congress or at least some agency outside of CPSC jurisdiction. Also, if approved, determining what constitutes as a substantial innovation, thus meriting a tax cut, can become problematic. Though not insurmountable, implementation is certainly a challenge for this regulation. However, since the potential savings to the amusement park industry is quite large, motivation to increase safety innovation is the likely result. Therefore, this regulation is effective in terms of its ability to change behavior in a positive direction so long as the political will is strong enough to implement it.

C. Information Disclosure Regulation Remedies Design Defects

Information disclosure regulation is ideal for amusement park regulation. Indeed, the best remedy for design defects is information disclosure.¹¹⁹ Such policies are needed to inform the public of the “true nature” of certain rides and to encourage companies to innovate so the “true nature” of the rides is more appealing to the

¹¹⁵ The superiority of the tax benefit is that it encourages innovation arguably better than other regulations do.

¹¹⁶ In many ways, the market-based approach is more “prevention-oriented” than the tort system. In the tort system, a person is injured. The person, perhaps, gets a favorable verdict, which brings the safety concern to the company’s attention. Only *after* the verdict does the company innovate. By contrast, the market-based approach encourages innovation *before* injury. As a result of innovation, the would-be plaintiff is never injured. The company profits and an injury is avoided.

¹¹⁷ Companies are effectively penalized for safety innovation in the ride context. The tort system does not offset this cost because successful lawsuits over rides are difficult for plaintiffs to win. This is evidenced, in part, by the virtual absence of discussion and information about ride safety among those who buy and sell rides. If safety were a profitable characteristic, it would be marketed and discussed in the industry.

¹¹⁸ Conversely, safety devices from other areas can be incorporated into rides to increase safety.

¹¹⁹ “Design defects” as defined here implicitly excludes gross design defects. Rather it refers to the fact that as a result of the design of high force rides, some riders will be seriously injured. However, others will have a seriously good time riding the ride. Thus, the “design defect” injures some, but not all, riders. It is still a design defect, but not a gross design defect. A gross design defect would be a ride that derails because the turn was too sharp given the ride’s current speed. Gross design defects render disclosure inadequate.

potential customer. Information disclosure is a very effective regulatory method in the amusement park context.

Information disclosure allows potential riders to make an informed decision about a particular ride. It allows the person to balance the benefits of riding the ride against the potential risk. Disclosure also allows the person to make the choice based upon reasonably reliable information that is material to the issue at hand. Since it is wrongly but widely assumed among the general population that all rides at major theme parks are safe, information disclosure will prevent misinformation from being the basis of the choice. This allows the person to more accurately make the decision to ride or not to ride because the person will have a more realistic understanding of the risks associated with a particular ride.¹²⁰ Information disclosure also allows people to make individualized choices that incorporate both actual fact and their individual personality traits.¹²¹ It strikes the proper balance between the right to offer fast rides and the right to not be injured.

A requirement to disclose safety information encourages manufacturers to design safe rides and amusement parks to purchase safe rides. Currently, amusement parks benefit from the public's assumption that all rides are safe. However, since information disclosure would erode this assumption, interest in designing safe rides would increase. First, some parks would insist on safer rides based upon the data they collect and internalize from the collection process.¹²² Further, parks would insist that manufacturers design safe rides to avoid disclosing to the public the dangers of such rides.¹²³ Finally, parks would insist that the manufacturers design safe rides because the park would lose profits from safety oriented customers.¹²⁴ Information disclosure, in this context, has the potential to make rides safer.¹²⁵

Effective information disclosure requirements must be specific about the information that amusement parks are required to disclose. Amusement parks should be required to provide all people who enter the park with a packet of information that details the safety of each ride. The packet must devote two full pages of detailed information to every single ride in the park. The data on each ride must explain the duration of the ride, the maximum speed of the ride, the maximum

¹²⁰ Rides and prescription drugs have much in common in terms of information disclosure. Information disclosure requirements on prescription drugs inform the person that there is a risk (cost) to ingesting the drug, in addition to a benefit. The informed person can then more accurately engage in cost-benefit analysis to determine if the benefits of ingesting the drug is worth the risk of injury. Information disclosure, in theory, counters the belief in the general population that all prescription drugs are safe.

¹²¹ Information disclosure is apt here because in most cases an objectively correct choice does not exist. Riding a high force ride is not so safe that the person is guaranteed to avoid injury, but it is not so dangerous that the person is certain to be injured. Riding has benefits (fun) and costs (risk). Most rides are such that the reasonable person could either decide to ride or not to ride and either choice would be "reasonable." Since the right answer is whichever choice a person makes, it is critically important that the person making the choice is fully informed. Only the fully informed person can make the right choice. Information disclosure enables the person to make a subjectively correct choice, since there is no objectively correct answer.

¹²² This is called the reflexive function of information disclosure. See Malloy, *supra* note 29, at 662 (describing the functional mechanisms of information disclosure).

¹²³ This is called the deterrent function of information disclosure. See *id.* at 665 (describing that the expected reaction of the information recipient may alter the actor's conduct).

¹²⁴ This is called the enhancement function of information disclosure. See *id.* at 668 (explaining that the enhancement function of information disclosure encourages the actor to divulge the information).

¹²⁵ *Id.*

G-force encountered on the ride, the duration of substantial G-force encountered on the ride, the time in milliseconds between rapid changes in G-force direction, the direction of the G-force, and the potential adverse effects on health of the G-force encountered.¹²⁶ It is critically important that the public understand the significant danger associated with levels of G-force encountered on modern rides.¹²⁷ The information disclosed must be very specific and rich in detail that relates to each ride. A general statement to the effect of “this ride subjects riders to high levels of force” is unreasonably vague and falls well short of satisfying the information disclosure requirement. Actual, specific, materially-relevant facts about the ride must be disclosed.

Such specific facts revealed under information disclosure are likely to be read by safety-conscious visitors who enter the park. Also, for any group of individuals who visit the park together, the group requires only one safety-conscious individual to read the warnings and convey the information to the other members of the group. Such a method of disclosure ensures that all individuals who attend the park have the *opportunity* to be fully informed about the park’s potential dangers.

To reduce any problems potentially resulting from information overload, a graph corresponding to the data should be required. This requirement should mandate that the graph corresponds to the information on a specific ride. This graph must visually depict critical information about the ride.¹²⁸ Below the graph there must be a corresponding graph depicting the levels of force fighter pilots experience during flight maneuvers.¹²⁹ Furthermore, a “plain English” description explaining the

¹²⁶ For example, G-force in the +z direction can reduce blood flow to the brain causing a loss of consciousness. This can result in additional injury from being thrown about the ride unconsciously. G-force in the -z direction increases pressure on the capillaries. This can result in bleeding in the brain. G-force in the -x direction pushes the head forward while G-force in the +x direction pushes the head backward. This can result in bruising of the brain. See generally Paul Webb, *G Tolerance in 4 Vectors*, in BIOASTRONAUTICS DATA BOOK (1964) (explaining the effect of G-forces on the human brain).

¹²⁷ See generally *id.* (documenting the effects that G-force can have on humans). For G-force in the +z direction [up, toward sky], Dr. Webb observes that at “3gz movement is difficult; at 4gz, visual symptoms and slowed awareness; at 5gz humans are at risk of loss of consciousness.” *Id.* For G-force in the -z direction [down, toward earth], he observes that at “-1gz, humans exhibit a sense of pressure in their head; at -2gz, there will be severe head aches, nose bleeds, and swelling of the eyelids; at -4gz, mental confusion and unconsciousness; at -5gz, risk of death.” *Id.* While both are harmful, the direction of the force is critical. While 5gz toward the sky can cause one to black out, 5gz toward the earth can kill a person. Direction is critical to health and safety. For comparison, the Shockwave (Six Flags, Texas) generates 5.9gz, and Mr. Freeze (Six Flags, Texas) generates 4.1gz. Additional comparisons: Flashback (Six Flags, Massachusetts) 5.2gz; Coast-to-Coast (Great Escape, New York) 5.2gz; Zoomerrang (VisionLand, Alabama) 5.2gz; Boomerang (Knott’s Berry Farm, California) 5.2gz; Sea Serpent (Wildwood, New Jersey) 5.2gz; Batman and Robin (Six Flags, New Jersey) 5.0gz; Rock ‘n’ Roller Coaster (Disney World, Florida) 5.0gz; Face Off (Kings Mills, Ohio) 5.0gz; XCoaster (Magic Springs, Arkansas) 5.0gz; Revolution, (Six Flags, California) 4.9gz. According to Dr. Webb’s standards, these types of rides have the ability to cause black outs.

¹²⁸ The graph should contain a vertical (y) axis and a horizontal (x) axis. The y-axis corresponds to force experienced. The x-axis corresponds to duration or time. A multicolored line is drawn to correspond to force and duration. The color of the line will be green, yellow, and red. Red means a sensitive person is likely to lose consciousness. Yellow means a sensitive person will get tunnel vision. Green means a sensitive person will not experience a problem. A person can quickly glance at the chart to see how long he is “in the red.”

¹²⁹ Given the advanced nature of modern rides, such a comparison is not trivial. Recall, the forces on some of today’s rollercoasters exceed the force that astronauts experience during take-off.

significance of the scientific data must be provided.

Amusement parks already possess the data that should be disclosed to the public. However, they currently guard this information and keep it from the general public.¹³⁰ Since the information has already been collected, amusement parks cannot argue data collection is too burdensome. Amusement park riders have a right to know precisely what the park is offering to entertain the visitors. Furthermore, amusement parks themselves will enhance the safety of rides to avoid disclosing that a ride is potentially unsafe.

In terms of effectiveness, information disclosure requirements are very strong in terms of implementability and strong in terms of workability to change behavior. Since the amusement parks already have the data collected on their rides (as collected by engineering firms), merely requiring them to disclose the data presents no dilemmas for implementability. Implementability would be more problematic if all the data had to be gathered or if determining the data were extremely difficult. Also, information disclosure is likely to positively change the behavior of both the amusement park and its visitors.¹³¹ Since parks already have the data and are aware of its contents, the reflexive function of information disclosure will be absent; however, the deterrent effect and the enhancement effect will likely be present.¹³² In an effort to avoid disclosing negative data about the rides, amusement parks will attempt to make the rides safer; if the parks do not, some customers are likely not to attend the park, which in turn could result in a significant loss in revenue.¹³³ Also, many riders are likely to change their behavior in as a result of the information disclosed.¹³⁴ Even those who do not appreciate the full value of the data will be alerted to the fact that, contrary to popular belief, not all rides are safe for all people.

D. Management-Based Regulation Fixes Maintenance Problems

Management-based regulations are useful to combat injuries that result from poor maintenance of rides. Proper maintenance is important because, if lacking, relatively safe rides can become very dangerous.

Management-based regulation should be implemented to require all amusement parks to hire a team of engineers, full-time and fairly paid, whose job is limited to focusing on the safety of existing rides and advising the park on potential safety issues relating to new rides. The critical requirement of the management-based regulation must be that the engineering team focuses exclusively on park safety.¹³⁵

Engineers inspecting rides are more likely to catch maintenance accidents that

¹³⁰ This information is not found on amusement park websites or brochures produced by the parks. The only way to obtain the data is indirectly from the engineering companies who tested the rides and posted the data.

¹³¹ See Malloy, *supra* note 29, at 668 (explaining the probable effects of information disclosure).

¹³² See *id.* (explaining how disclosure may affect decision making).

¹³³ From a market perspective, the additional costs associated with enhanced ride safety are outweighed by the potential loss in revenue.

¹³⁴ See Malloy, *supra* note 29, at 668.

¹³⁵ A team of qualified engineers with the authority to freely inspect rides on the park's grounds will catch subtle maintenance problems the untrained eye might miss. These problems can be fixed before evolving into more serious problems. Also, a team of engineers would be better able to prioritize the order that problems should be fixed, correctly judging which is the most serious and which is actually trivial.

require human judgment to identify before they happen. For example, a dragster themed rollercoaster ride might have a large tire attached to the back of the train for theme decoration. An engineer is more likely than a layman to inspect the bolts that attach the tire to the train and to notice the bolts have loosened with motion so that the tire is likely to fall off the train and injure a bystander. An in-house team of engineers would also be available to quickly respond to a report by a ride operator that “something about the ride does not seem right.” The engineers could quickly assess the seriousness of the situation and determine what, if any, additional steps need to be taken.

The team of engineers required by management-based regulations could greatly aid in park safety by identifying the level of difficulty and potential maintenance problems that are likely to arise in the future if the park purchases a specific ride. In the event the park is considering two equally desirable rides from different manufacturers, the team could advise the park which ride is the best selection in terms of safety.¹³⁶

Of course, the downside to such a management-based regulation is that administrators can always ignore the recommendations of the engineering team or utilize additional methods to undermine their effectiveness.¹³⁷ However, safety is not a goal that is adverse to the goals of most amusement parks. Thus, such a management-based regulation would bring safety issues to the attention of administrators. These administrators would then probably address the safety issues. Without the management-based regulation, safety issues would probably be ignored, not intentionally, but because other issues are on the radar screen that more directly relate to the success of the park.¹³⁸ The management-based regulations put in place a structure that will put safety on the radar screen, which allows administrators to promptly address the concerns. Thus, in the amusement park industry management-based regulations can aid in safety regulations.

In terms of effectiveness, management-based regulations are easy to implement and are likely to result in a positive change in behavior on the part of amusement parks.¹³⁹ As to implementability, the requirements can be adopted and the amusement park can comply with the regulations without undue hardship. Although it is expensive to hire a team of engineers on the part of theme parks, the amusement parks should be able to absorb this cost.¹⁴⁰ The regulation is inexpensive for the

¹³⁶ Of course, one aspect of safety is how easy the ride will be to maintain. While the engineers have the attention of management, they could also advise the administrators on which ride is best in terms of safety in general. Such a regulation would certainly bring the topic of “safety” to the table.

¹³⁷ Administrators could hire notoriously incompetent engineers who are almost certain to miss even obvious problems but then turn around and use the fact engineers to find no problems, which could be used as evidence to show the ride was in good maintenance. Also, administrators could use the method to undermine the regulatory goal by using the engineering team to find the cheapest possible way to keep rides functioning or to select problems that probably can be ignored or to help them select rides that just narrowly meet safety standards.

¹³⁸ For example, most administrators would probably focus on how likely the ride is to attract new guests to the park and how to best market the ride. Without the engineering team at the table, administrators are likely to assume the ride is safe, if safety even crosses their minds.

¹³⁹ See Coglianese & Lazer, *supra* note 86, at 703 (noting that once firms choose a management-based approach it may result in both private and social gains).

¹⁴⁰ The additional cost of engineers devoted to safety and maintenance may be offset by decreased litigation expenses and reduced insurance premiums that result from fewer accidents.

government to mandate but advance the compelling goal of public safety. These regulations are workable and are likely to positively influence the behavior of amusement parks. While an amusement park could undermine the effectiveness of a regulation, this is unlikely because it is to the advantage of the amusement park to maintain a safe park and reduce the number of accidents. Although theme parks, on their own, might decline to hire a team of engineers in an effort to reduce overhead and increase profit, once amusement parks are required to hire the engineering team, they are likely to hire competent individuals who will find maintenance problems and correct the problems before a tragedy occurs. After all, amusement park accidents generate negative publicity. If the parks are required to hire the engineers, they will want to get their money's worth in terms of safer parks and reduced negative publicity.¹⁴¹ Thus, the management-based regulation is effective.

IV. CONCLUSION

The best way to regulate an industry, which encompasses a wide variety of issues, is to match the problem to the regulatory method that is best able to address the harm. In the amusement park industry, that is the only way to maximize the safety of amusement parks. Relying solely on only one regulatory theory is wholly inadequate.

Amusement parks, widely visited each year, should be safe places, not parks lurking with hidden dangers. Public safety demands that regulatory theory be maximized to increase the safety of parks. Parks and ride manufacturers should strive for safety and the public should be fully informed as to the actual risks that are present in an amusement park.

Amusement parks currently have not maximized their safety potential for a variety of reasons. Many problems, which vary widely if analyzed individually one-at-a-time, function collectively to make amusement parks more dangerous than necessary. In other words, "amusement park safety" is a phrase that collectively corresponds to a wide variety of sub-issues that must be addressed to make parks safer. The reasons for each individual sub-issue that hinder park safety stem from different causes. In order to advance the cause of "amusement park safety" a regulation must be selected to address each sub-issue. If only one regulatory approach is utilized, then only one sub-issue is fixed but the remaining sub-issues are unaddressed.

A one-size-fits-all approach is wholly inadequate to regulate the amusement park industry. If only blanket command and control regulations were to be implemented, construction problems would be addressed, but design defects and maintenance problems would not be. However, if command and control regulations address construction problems, and information disclosure regulations address design defects, and management-based regulations address maintenance problems, and market-based regulation are implemented to bring about safety innovation, every major issue facing the amusement park industry is adequately addressed.

¹⁴¹ In other words, parks will probably take the position that if they have to hire a team of engineers, then it is to their advantage to hire a good team of engineers. In fact, some parks may even favor the regulation because it corrects a structural problem that, if not corrected, may have significantly exceeded the cost of the engineering team.

Hence, this article concludes that command and control regulation should be utilized to regulate construction problems. The characteristics of this type of regulation best match the simplistic steps that can often be taken to fix construction problems. Information disclosure regulation should be utilized to regulate design defects. Only consumers who are armed with reasonably reliable information materially relevant to the choice at hand can make a reasonable choice about riding a ride, and amusement parks need to select and market rides under the assumption the public will actually be informed about the risks associated with such rides. Management-based regulations should be utilized to address maintenance problems. That way, safety will be on the radar screen of administrators and many accidents will be prevented before they ever happen as a result of the management-based regulations. Finally, market-based incentives, narrow in scope and carefully crafted, can be utilized to bring about innovation in ride safety.

In the amusement park context, effective oversight requires that the regulation-to-harm approach be utilized to address the amusement park safety problem that is currently before Congress. This approach would substantially improve amusement park safety because it adequately and fully addresses each and every issue that confronts the industry. Indeed, this approach is generally better than trying to use one method to regulate an industry because it takes into account that the word "problem" often collectively refers to several sub-problems. This approach allows one to address all the sub-problems, thereby taking steps toward a comprehensive solution. There is not one size fits all remedy that will work to regulate every business. The regulation matched to harm approach takes this into account by allowing the method that is best able to solve a particular dilemma to actually address that dilemma. Finally, this approach unifies the divided area of regulatory theory because it recognizes that each and every regulatory theory has its own very real strengths and weaknesses. This method attempts to utilize all of regulatory theory to regulate an industry rather than trying to rely solely on one regulatory model or theory. This method, the method of matching the regulation to the specific harm that needs to be addressed, should be utilized widely in other areas of business as well.