Utilities that generate renewable power through wind, solar, small hydro, or other means sell two things: actual electricity, and, separately, credits that represent the environmental benefits, as measured by reduced carbon emissions, of their cleanly produced product. Thus, one purchaser may buy a kilowatt-hour of clean electricity but a separate purchaser may buy "rights" to the environmental benefit of that same unit of electricity.

On paper, anyway, a purchaser whose use of electricity from a coal-fired plant generates, say, a ton of CO_2 may offset that pollution by buying RECs that represent an equivalent amount of nonpolluting electricity. The money paid to purchase those RECs, in theory, subsidizes the higher cost of producing clean electricity, making this alternative competitive, or creates a market mechanism that will cause more renewables to be produced.

There's a problem with this calculus, though: The clean electricity that a wind farm produces, for example, is fed into the utility grid for distribution regardless of what becomes of its associated RECs. Those RECs are handled independently; they may be sold for a lot or a little, immediately or sometime in the future. Right now, huge surpluses of low-priced RECs are flooding the market, and the cost of an REC represents just a fraction of the added expense of making green power. Therefore, the purchase of a kilowatt-hour worth of RECs does not necessarily displace a kilowatt-hour of dirty electricity; nor, by extension, does it reduce the amount of CO_2 entering the atmosphere.

In short, it's doubtful that most RECs are delivering the environmental benefits ascribed to them. So where does this leave companies that genuinely want to reduce the environmental impact of the electricity they use?

Happily, RECs do provide some environmental and social value – even if they don't directly reduce carbon emissions. In some cases, REC brokers have an ancillary mission to foster renewable energy production. Instead of just pocketing all the profits, REC sellers like Community Energy and the Bonneville Environmental Foundation earmark a portion of their profits for new renewable energy development. Another group, NativeEnergy, uses RECs to support wind on Native American reservations, which has social as well as environmental benefits. REC sales themselves sometimes subsidize otherwise untenable renewable energy projects. For example, a solar installation may not have an acceptable payback until the RECs from that project are sold. And REC purchases, such as that made by Whole Foods, get national press and so increase public awareness of the need for climate protection.

But buyer beware: Not all RECs are created equal. Companies purchasing RECs should, at a minimum, be sure that these are certified to meet environmental and consumer protection standards by a third party called Green-e. Buyers should determine how the revenues from the RECs they plan to purchase are used by the brokers that sell them. And buyers should also look to the reputation and mission of the REC seller.

If your goal is to *claim* that your company offsets the carbon produced by 100% of its electricity usage, buy RECs and leave it at that. But if your goal is to directly reduce carbon emissions, there are better ways to do that, such as investing in a new wind farm.

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NETWORK THEORY

Marketing in an Unpredictable World

by DUNCAN J. WATTS AND STEVE HASKER

It's time for producers of entertainment – movie studios, broadcast and cable TV networks, video game makers, publishers, music labels – to change the way they launch and market their products. In entertainment markets, a sizable portion of revenue is typically generated by a small number of blockbuster movies, best-selling books, and hit songs. But even talented, experienced executives acknowledge that predicting these hits is effectively a crapshoot. How else to explain why Miramax paid ten times as much for *Happy, Texas* – which grossed $2 million at the box office – as Warner Independent paid for *March of the Penguins*, which grossed close to $80 million?

What should entertainment companies do to improve their odds of success? The key is to understand that the outsize performance of hits is not driven solely, or perhaps even primarily, by intrinsic attributes such as sound, plot, style, or even star power. Rather, new research shows, much of the success of entertainment products derives from social influence – the effect that consumers have on one another's decisions. So in addition to anticipating which features individual consumers might find desirable, executives should adopt strategies that take social influence into account.

A study conducted at Columbia University by Matthew Salganik, Peter Sheridan Dodds, and Duncan J. Watts, and published in the February 10, 2006, issue of *Science*, sheds light on the role that social influence plays in driving aggregate consumer demand. More than 14,000 participants were recruited through the teen networking site Bolt, and the impact of social influence on their choice of songs to download was tested. After seeing a selection of 48 digital songs by unknown bands displayed on a Web page, participants were asked to choose songs to listen to and then allowed to download the ones they liked. As they arrived at the site, they were randomly allocated to one of two experimental conditions: "independent," in which they saw only the names of the bands and songs; or "social influence," in which they were further divided into eight distinct "worlds," and could see, in addition to the bands and songs, how many times each song had been downloaded by previous participants in their respective worlds.

There were three main findings. First, social influence increased the inequality of outcomes in all eight worlds, meaning that popular songs were more popular and unpopular songs were less popular than when participants made decisions independently. Second, however, which particular songs would turn out to be successful in any given world was more difficult to predict. And third, both inequality and unpredictability increased as the strength of social influence was experimentally increased. Overall, the "best" songs rarely did very poorly, and the "worst" songs rarely did very well, but any other outcome was possible.

These results suggest that the success of a particular entertainment product cannot be explained by any measure of intrinsic quality or even by "appeal" – the fit between the product's attributes and consumers' preferences. Rather, when people are influenced by what others think or do or buy, their individual choices interact in complicated and inherently unpredictable ways. In other words, experts fail to predict hits not because they are uninformed or incompetent but because hits are driven by complex networks of social influences that render accurate prediction of specific outcomes impossible.

The implication for marketing executives is that they should de-emphasize designing, making, and selling would-be hits and focus instead on creating portfolios of products that can be marketed using real-time measurement of and rapid response to consumer feedback.

To move in this direction, we recommend five strategies:

1 **Increase the number of bets, and decrease their size.** Acknowledging that hits can't be predicted would lead movie studios, for example, to plan for several relatively modest films costing, say, $30 million each rather than a few big-budget ones costing $80 million or more apiece.

2 **Focus on detection, measurement, and feedback.** E-mail and chat rooms, search engines, blogs, and online communities can accurately measure individual and group reactions to new products in real time. By tracking demand and satisfaction indicators as they emerge, and combining them with separately available sales data, marketers can tailor their campaigns to a rapidly evolving and unpredictable market.

3 **Follow through with flexible marketing budgets**. Marketing resources should quickly be reallocated from unsuccessful to successful bets as consumer demand materializes. Initial outlays should continue to be guided by prelaunch market research, but marketers should aim at a broader target population than that suggested by their data and intuition. More important, they should direct postlaunch resources at consumers who are reacting positively to the product, whether or not they correspond to marketers' initial expectations. Instead of unlocking the door to consumer demand, marketers should focus on finding and then pushing on doors that are already ajar.

4 **Exploit naturally emerging social influence.** Once a product has gained a following, marketers can amplify the corresponding social influence signal by directing the attention of a much wider audience toward the individuals or groups who are already enthusiastic about it. This strategy differs subtly but importantly from word-of-mouth or viral marketing strategies that seek to identify so-called influentials in order to solicit their endorsements. Instead, we suggest that marketers can, in effect, create influentials by selectively modifying social influence patterns as they emerge.

5 **Build flexibility into supply chains and contracts.** Supply chains should be designed to respond rapidly to a growth in demand for some products, artists, or services and a drop in demand for others. Firms can also expend less on the majority of flops, but still capture a share of occasional hits, by building flexibility into contracts with creative artists. For example, more generous royalties and offers of support that are pegged to an artist's success could be exchanged for less up-front investment in production, promotion, and distribution along with an option on any derivative revenues of the kind that superstars typically generate – from endorsements, concerts, and follow-up products.

Rapid changes in the technology of media production, distribution, and consumption are driving a proliferation of choices for consumers – the so-called long tail. Some believe that this trend will reduce the importance of hit songs, blockbusters, and best sellers, as sophisticated search algorithms enable audiences to find and consume increasingly niche-oriented forms of entertainment.

We believe, however, that precisely this proliferation of choice will further challenge consumers' limited capacity to discover and digest content, thus strengthening their tendency to like – or at least preferentially consider – what they think other people like. Meanwhile, social networking sites such as MySpace.com and Facebook, tagging sites such as Flickr and Del.icio.us, and user-generated content sites such as YouTube are increasingly exposing ordinary individuals to one another's decisions about what they watch, listen to, and buy.

Together, these trends point to a world in which successes will be more dramatic – and also harder to predict – than ever. Marketers should therefore abandon the notion that they can either anticipate or determine specific outcomes and instead develop their ability

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to measure and exploit consumer demand as it arises.

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PERSONNEL

How to Fix HR

by GARY KAUFMAN

In my 34 years working in and around human resources, I've found that most HR departments are mired in power struggles, bureaucratic programs, and miscellaneous special projects when they should be focused on one objective: maximizing organizational performance. It's tempting to blame this sorry state of affairs on HR alone. But the fundamental reason has to do with lack of leadership by companies' senior managers – the CEOs, COOs, and company presidents whose jobs are to focus the various departments on accomplishing the organization's goals.

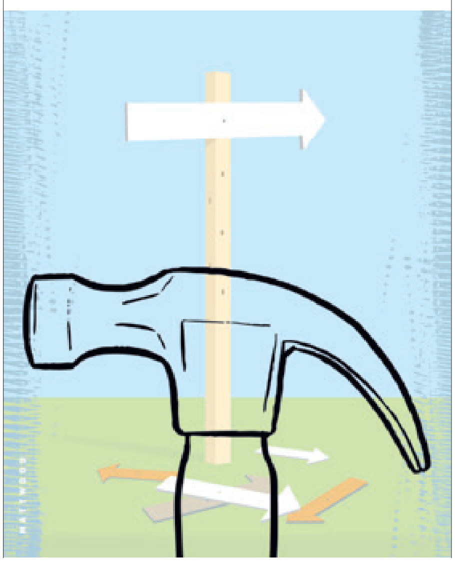
Consider HR mission statements. Here's a typical one: "To provide quality services and support in hiring, training, staff relations, benefits, compensation, and safety beyond the expectations of all employees, enabling them to better serve our external customers." Shame on the managers who approved this slop! Statements like this are painfully short on real deliverables and accountability. Why? I suspect that senior managers don't understand what HR can deliver. As a remedy, here are five steps to help direct and get more value from your HR department.

Step 1: Set a clear mission. The department's mission should put responsibility for business outcomes front and center: "HR's responsibility is to ensure that our human resources are more talented and motivated than those of our competitors. HR's performance will therefore be measured by comparing the company's sales, profits, and productivity with those of our top two competitors."

Saddled with this, your HR manager may have questions like, "Isn't the sales department supposed to be responsible for sales?" Answer by asking, "Where would the sales department be without sales*people*?" Respond this way as needed, whether the question relates to production, engineering, or customer service.

Step 2: Get rid of the distractions. Outsource costly, labor-intensive chores like benefits, payroll, and salary surveys so that HR can focus on attracting, motivating, and retaining superior employees. Suppress the urge to assign special projects to HR, things like implementing TQM or reengineering, or programs to imbue the "seven habits." Kill this stuff before it has a chance to grow in HR's fertile soil.

Step 3: Assess HR's technical knowledge. Check to see if your HR people have been keeping up with the literature in the field; if so, are they applying their knowledge to benefit your company? Can they defend HR's programs, citing research from reputable journals? Look at what the HR staff is reading. Do you see peer-reviewed journals like *Administrative Science Quarterly*, or books like *Personnel Selection in Organizations*? If the meatiest thing you can find is *HR Magazine*, you're in trouble. Ask questions of staff specialists like, "What is [competitor's name] doing to recruit management trainees?" "What's the latest research in gain-sharing plans?" or "What is the difference between test reliability and validity?" You don't need to know the answers to these questions, but HR certainly should.



Step 4: Find the right leader for HR. If you have a strong HR staff, promote a high-potential manager from a line organization. He or she will bring the credibility HR needs to make changes. If the staff is weak, you'll need to go outside to hire someone who has an advanced degree in business or industrial or organizational psychology and strong management experience. Don't be tightfisted here; there's a whole lot of money at stake. Don't make the mistake of transferring in a midlevel manager who is a "great people person" but has a marginal track record for achievement.

Step 5: Hold your HR manager accountable. You've set the goal. Now insist that it be met. Do not accept measures of *activity* – things like positions filled, training hours delivered, and appraisals completed on time. Require measures of *accomplishment* that reflect business success: sales or revenue, profits, productivity, customer retention, and so on.

If you implement these five steps, you'll see some dramatic changes. HR will abandon traditional programs that have no demonstrable impact on organizational performance, and it will create programs that boost results–such as compensation plans that tightly link pay with profits and aggressive recruitment approaches that lure the best people away from competitors. You'll also see your HR manager – under the spotlight and required to deliver – actually fire ineffective HR employees and replace them with more talented people who understand HR's true role. Ultimately, you'll see the real fruits of HR's new approach reflected in your bottom line.

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