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**Sweepstakes: Give the Old Lady a New Look**

**By Dinko Bacun**

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The sweepstakes is an old marketing tool everybody is using. If you need to introduce a new product, or you need to give your sales a boost, you use the sweepstakes. Usually, you will have a drawing from the pool of your buyers, and each week, or month, you will draw some winners, either by some computer algorithm or hand of some beautiful or famous person.

The problem with the sweepstakes concept is that everybody is using it, so that a particular sweepstakes promo gets indistinguishable, and the participant knows, from previous experience, that his/her chance of winning are slim. Lottery type drawing is impersonal, it has no content, and always leaves the taste of possible fraud with the people who didn't win.

The main object of sweepstakes, which is to bring more buyers, is thus losing its power in web marketing. On the web everybody is talking about content and learning experience, so, for our 10th anniversary we thought of giving the old lady a new look.

Being IT developers, we knew we had to give the participants a better chance to win, while still be in the range of acceptability for us. We understood that the chance for a participant to win should be bigger at the beginning, so that it should nudge him to participate (buy our product) early. In mathematical terms, we should be using such a DISTRIBUTION, which will give the participant a big chance to win early, while still giving a fair chance of winning later on. We decided on prime numbers distribution, mostly because of a catchy name, i.e. we could say that our sweepstakes were "primed".

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The distribution would be implemented in such a way that every buyer would get an unique, sequential ID number, when he buys. If his ID number is a prime number, he wins the sweepstakes.

The distribution of wins is really appealing to the participant:

54% chance of winning in the first 11 buyers

45% in the first 20

26% in the first 100

16.9% in the first 1000

12.3% in the first 10000

So, for any sales over 100, we would be in the regular range of standard 25% opening discount everybody gives away. On the other hand, even if the participant isn't among first 100 buyers, he stands a fair chance to win because even high numbers like 9923, 9929 and 9931 are primes. More importantly, the participant has a feeling he can control the winning because he can increase his chances if he buys early, which is, of course, the main purpose of the sweepstakes.

We designed a page ( <http://www.CarpioHelpdesk.com> ) and showed it to some of our friends, and we were surprised to learn that most of them didn't really know what prime numbers were, and felt we were feeding them some kind of "get \$90,000 in 14 hours flat" scheme. We then realized we were on the Net, and that we should add "content" to our sweepstakes, the participants should be able to learn something new, should learn about the importance of prime numbers in computer industry.

So, what's so important about prime numbers?

K.F. GAUSS, one of the fathers of modern mathematics, in his *Disquisitiones Arithmeticae*, Art. 329(1801) says that distinguishing prime numbers from composites (non prime) is one of the most important and useful problems in whole of arithmetics. Donald E. Knuth, one of the fathers of computer programming, calls the prime numbers "somewhat MYSTERIOUS" and says it will be necessary to develop new mathematical properties to fully understand their distribution.

First of all, what is a prime number?

A prime number is an integer greater than one which can be divided only by one and itself. One, two and three are primes. Four isn't, because it is divisible by two. Five and seven are

primes, while six (divisible by two and three), eight (divisible by four and two) and nine (divisible by three) are not.

Prime numbers play an extremely important role in mathematics and are used in numerous calculations (most known are factoring, greatest common divisor, linear equation solving, etc.). But perhaps the most important quality of prime numbers is the simplest one: any number greater than one may be written as a product of prime numbers.

But their real importance for the computer world became evident around 1977, when R.L. Rivest, A. Shamir, and L. Adleman discovered a way to encode messages in such a way that the code would be almost impossible to break even if the method of encoding was public, i.e. known to everybody.

In very simple terms, if you have a secret code (number), and it is written as a product of two prime numbers, then you can make public the method of encoding, and the number (public key), while the factor is kept secret. Sound familiar? Remember PGP? So, how secure would be such an arrangement?

It would be easy to generate a prime number of about 120 digits, as it would take only about 90 comparisons using modern algorithms. Generate another prime number of 130 digits, and you would end up with a key of 250 digits which would be the security code. Prof. Donald E. Knuth in "The Art of Computer Programming" Vol.II page 388 analyzes how long would it take to break such a security code. If we knew of a method to find factors of a 250 digit number in one tenth of a microsecond (which is what the FLOPS term is all about), we would need about 10 to the power of 25 microseconds (that's a big number of microseconds: one followed by twenty five zeroes) to find all the comparisons. As there is only 1,556,952,000,000 microseconds in a year we would need more than  $3 \times 10$  to the power of 11 [300,000,000,000] years of CPU time to find the answer. If there were a government agency which would try to decode the message, and it purchased ten billion computers and set them all to work on such a problem, it would still take them 31 years to crack the security code into factors. So if you published the security code (public key) and also the method of encoding, but kept secret one of the factors you would still be pretty secured.

Understand why all the fuss about PGP (which stands for Pretty good privacy)?

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Understand the importance of prime numbers?

So, the old lady is getting a new fresh look. It seems far more interesting than the lottery style sweepstakes. The participant seems to control his chances, and the cost for over 1000 buyers is even less than the regular opening discount everybody gives away. We just added content, i.e. we let the participants learn something new, which is what the web is all about.

I guess the point of this article really is: you shouldn't throw away the old marketing tools that worked well for so many years. You just have to make them content rich, give them a new twist.

### **Win a Business Start-up**

**By Bruce Scher**

Celebrate the 40th consecutive National Small Business Week, September 8-12, and enter the "Win a Business Start-up" Sweepstakes.

Now's your chance to join the 26 million small business owners, in the U. S. that employ more than half the country's work force, and create three of every four new jobs.

New research from the Small Business Association, shows that 67% of new ventures are successful after four years. Disproving the widely held belief that 90% of start-ups fail in the first year.

The sweepstakes is offering one grand prize worth \$1000.00 in products and services which consists of: 13,500 internet banners, \$350.00 pay per click search engine credit, Full-Time Money Part-Time Hours – ebook, and 30 days of personal support with small a business advisor.

The sweepstakes is free to enter and only one entry per person is allowed. The official rules and entry form are available at:

Don't let the talk of a slowing economy discourage you from going ahead with your home business start-up. Forrester Research reports online web sales will reach \$95 billion at the end of 2003, up from \$76 billion in 2002, that's a 25% increase.

Think of your new business as a work in progress, and by the time you get it up and running, the economy will be up and running, too.

Bruce Scher is a home business advisor, and author of a new eBook,  
"Full-Time Money Part-Time Hours"  
"An excellent ebook" \_Les Brown, Nationally Known Author

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Win a Business Start-up  
New Jersey Resident Wins \$500 National Sweepstakes  
Huge Free Exposure With a Sweepstakes  
Increase Customer Return with Contests and Sweepstakes  
Car Insurance For Lady Drivers

HIV/Aids Healed by the Power of God  
Hints for lovers  
The Amazing Bonus Pack  
Valentine Day Recipes  
Proven Pricing Secrets



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