



# Emerging Technologies

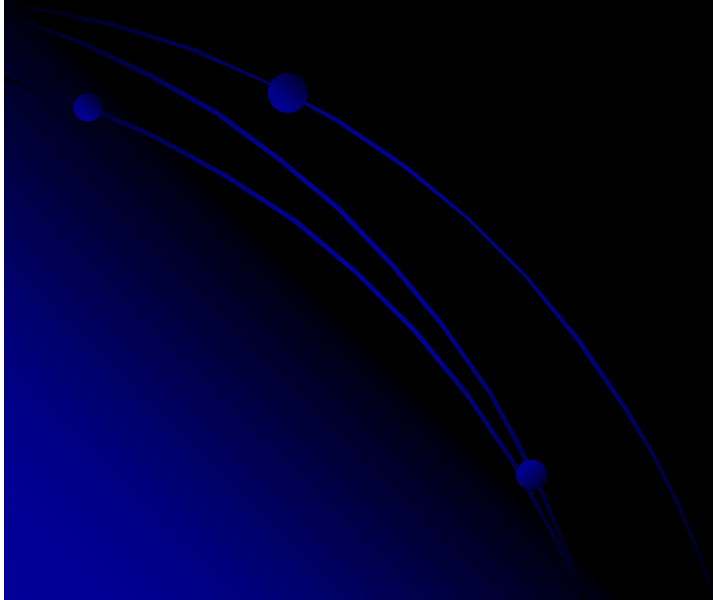
Ron Faulds and

Barb Fardell

Michigan Department of Ed.



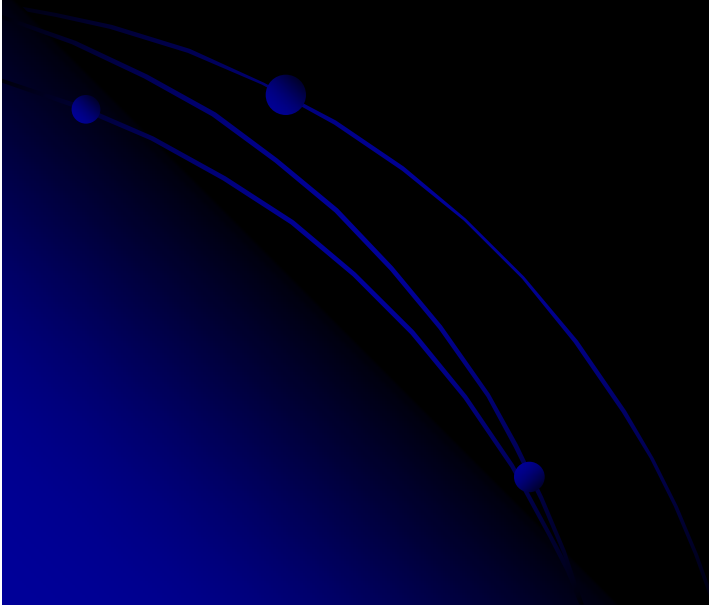
# Web 2.0



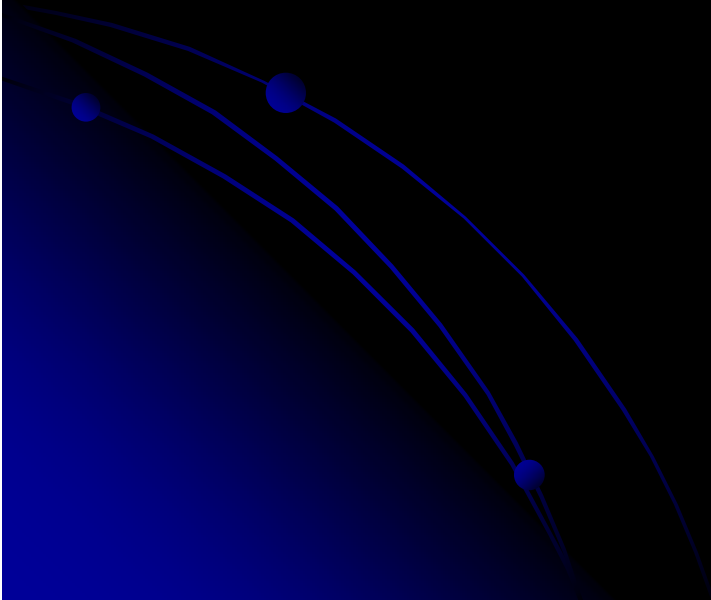


**School 2.0?**

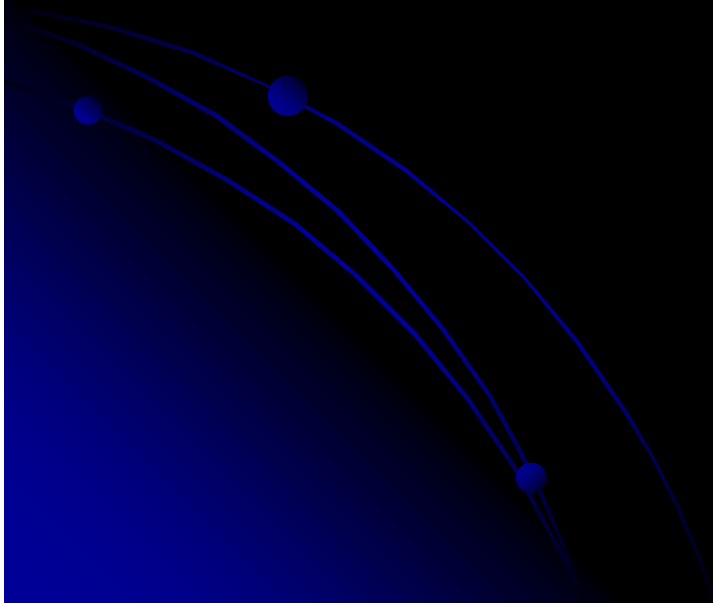
# Did You Know . . .



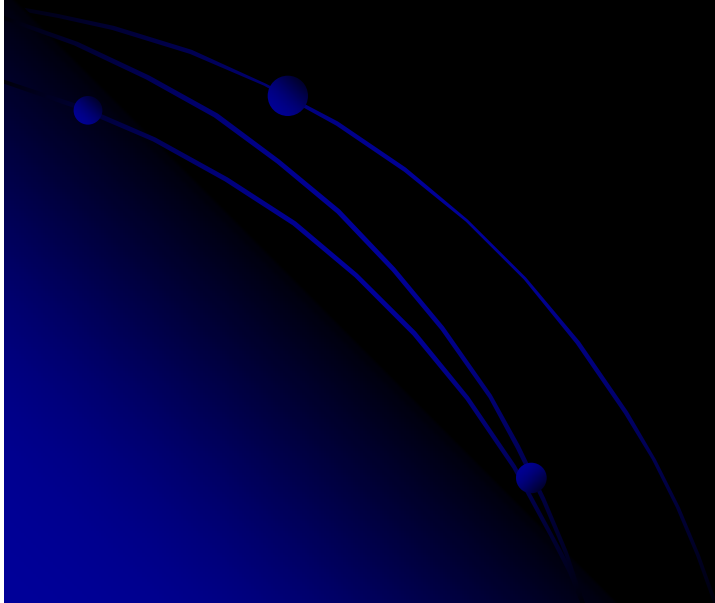
**Sometimes size *does* matter.**



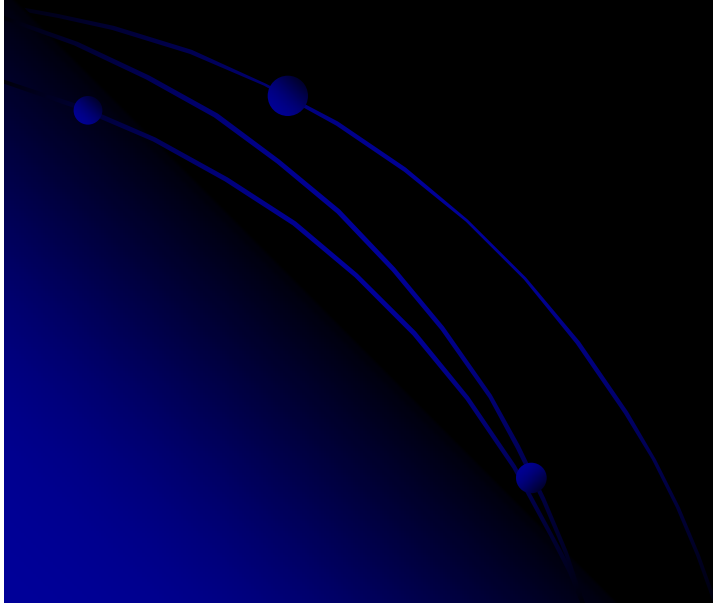
**If you're one in a million in  
China . . .**



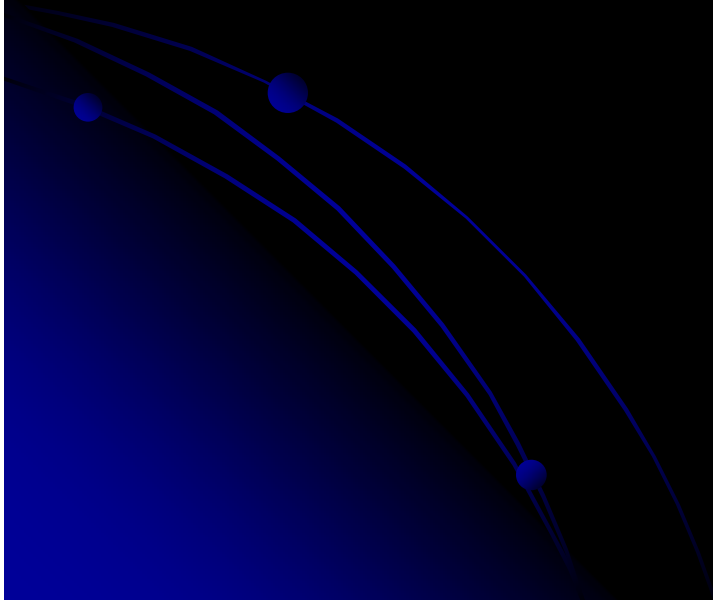
**There are 1,300 people just  
like you.**



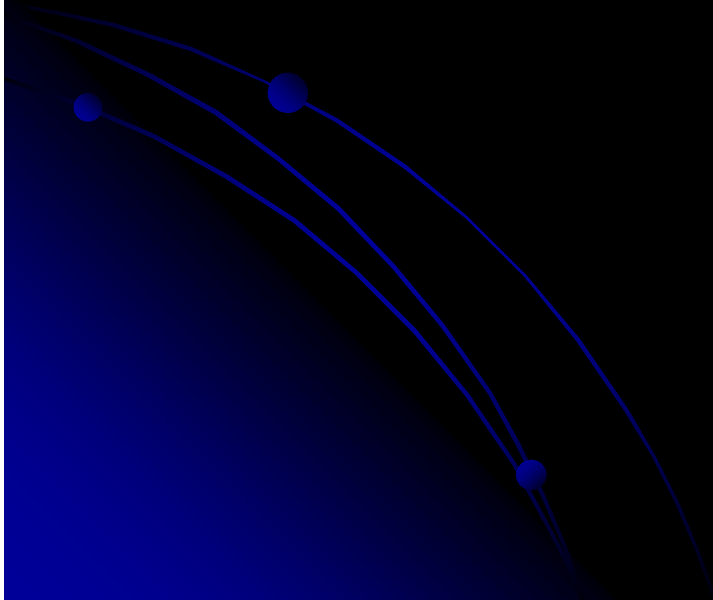
**In India, there are 1,100  
people just like you.**



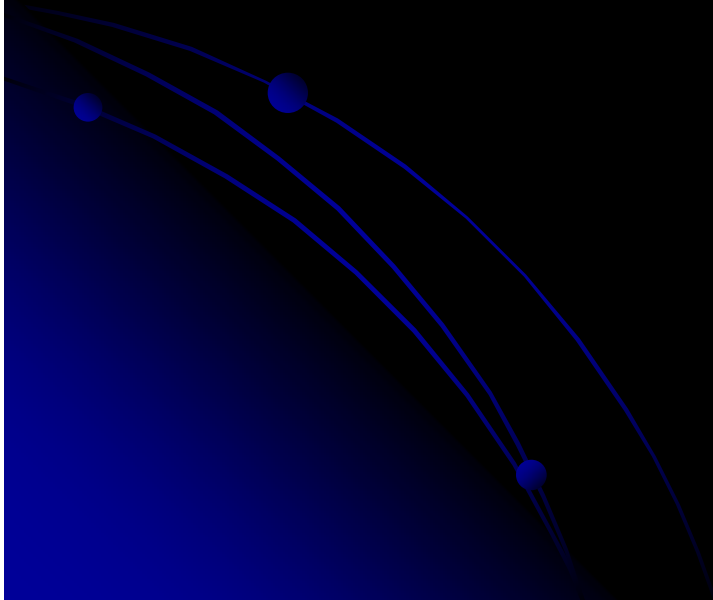
**The 25% of the population in  
China with the highest IQ's . . .**



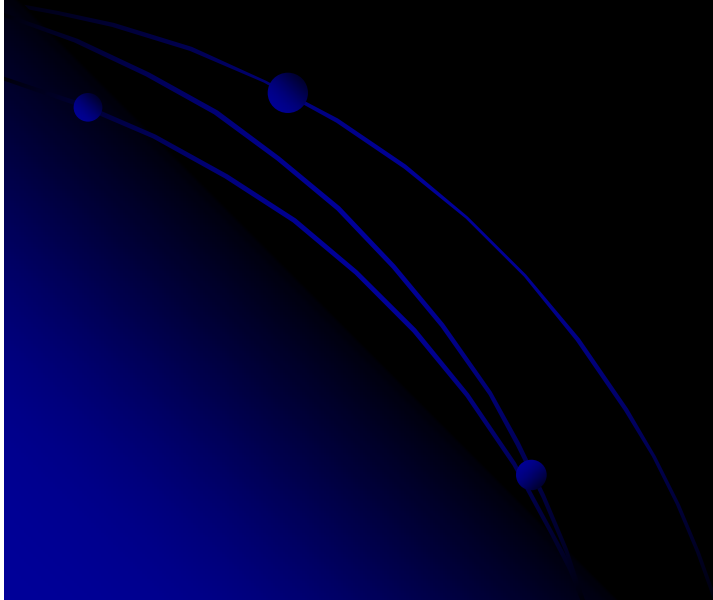
**Is greater than the total  
population of North America.**



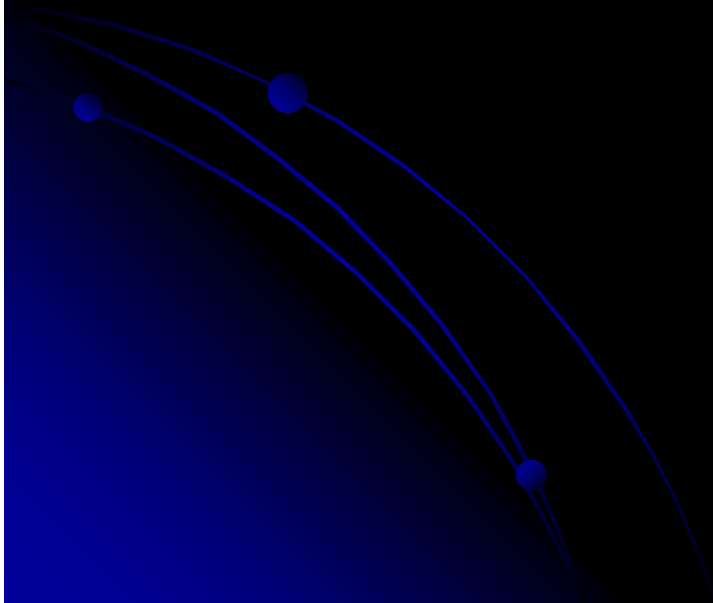
**In India, it's the top 28%.**



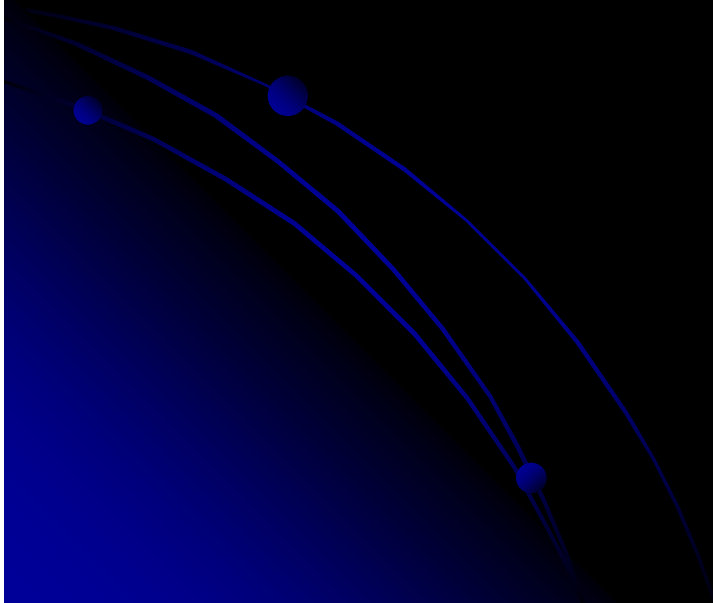
**Translation for teachers:  
They have more honors kids  
than we have kids.**



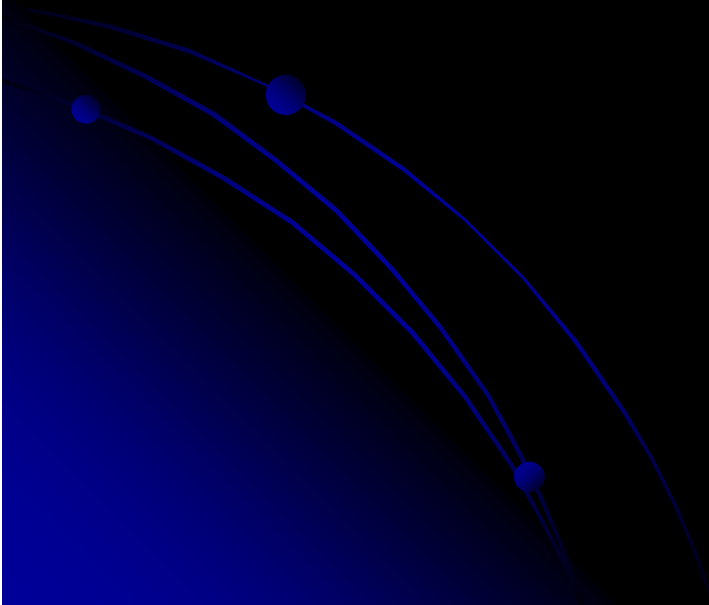
**Did you know . . .**



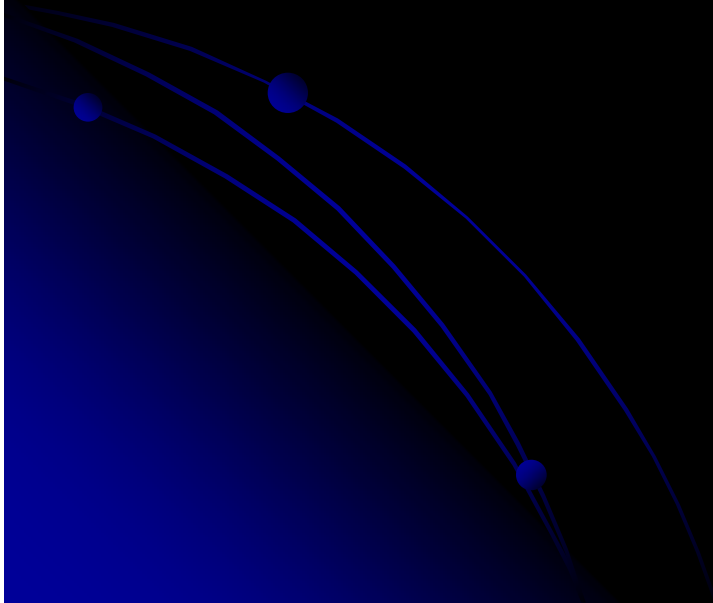
**China will soon become the  
number one English speaking  
country in the world.**



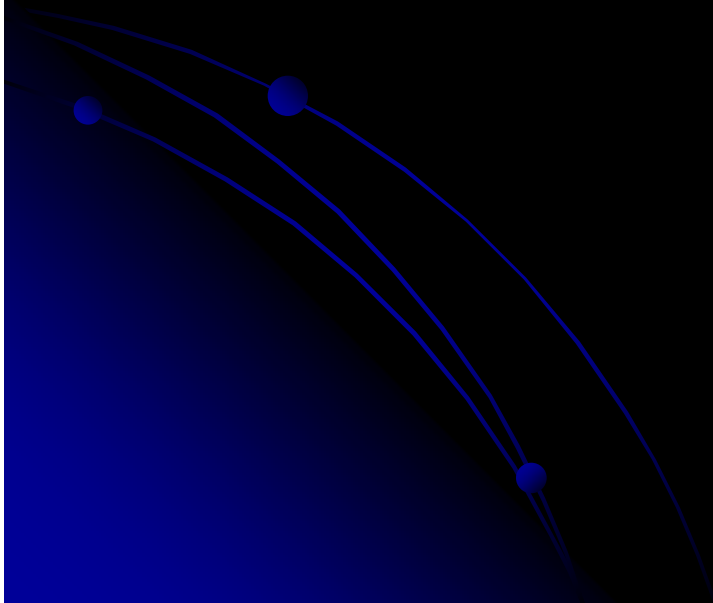
**If you took every single job in  
the U.S. today and shipped it to  
China . . .**

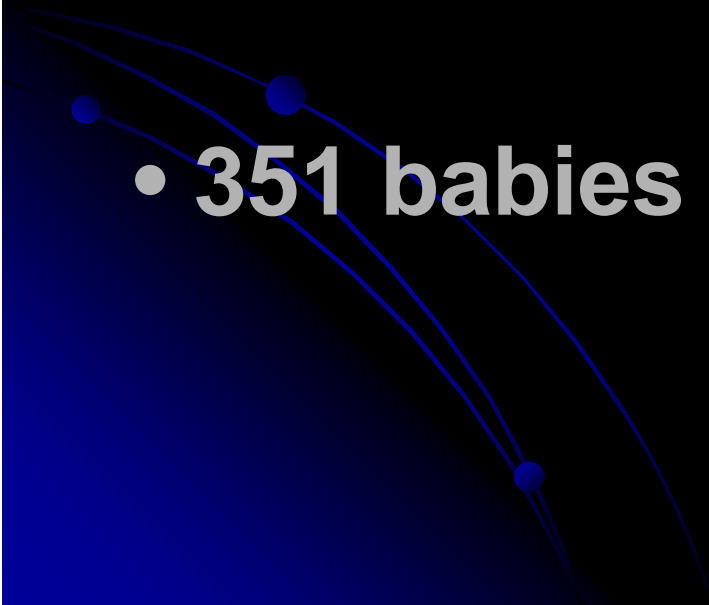


**China would still have a labor surplus.**

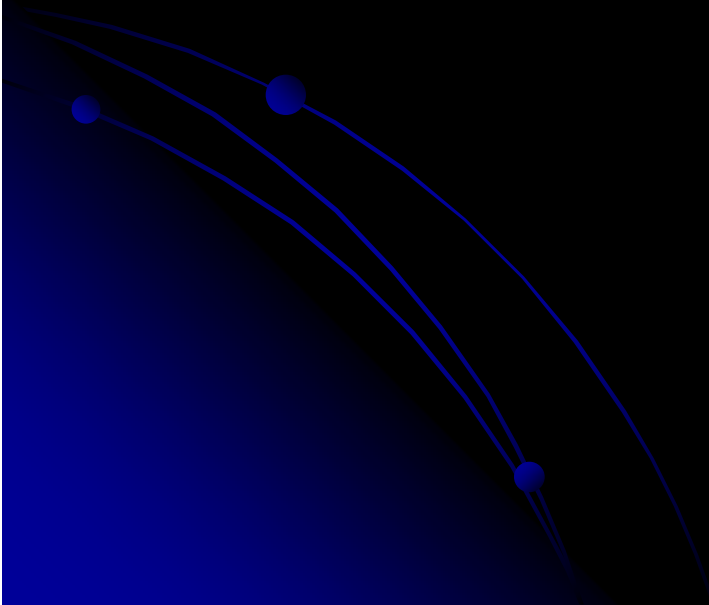


**During the course of this 8  
minute presentation . . .**

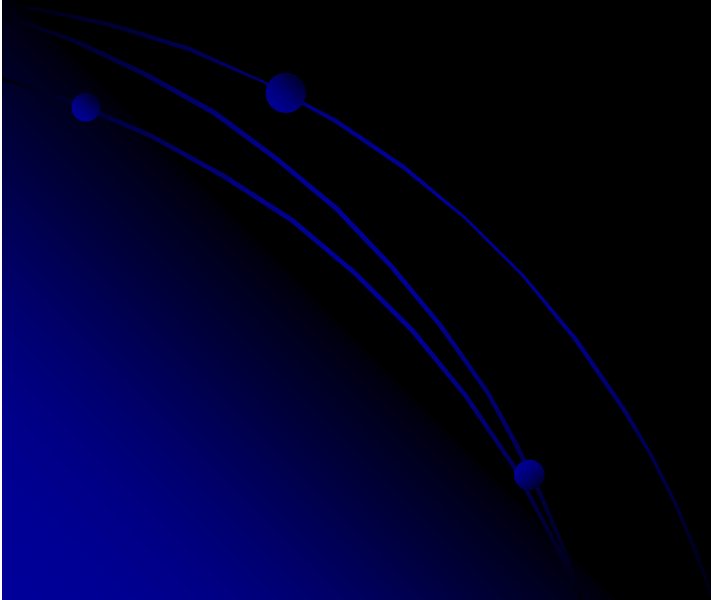


- **60 babies will be born in the U.S.**
  - **244 babies will be born in China.**
  - **351 babies will be born in India.**
- 

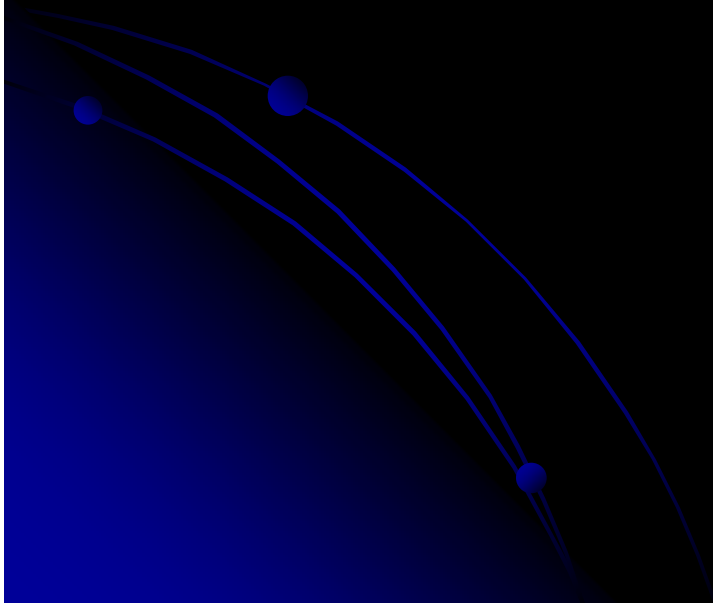
**The U.S. Department of Labor  
estimates that today's learner  
will have 10-14 jobs . . .**



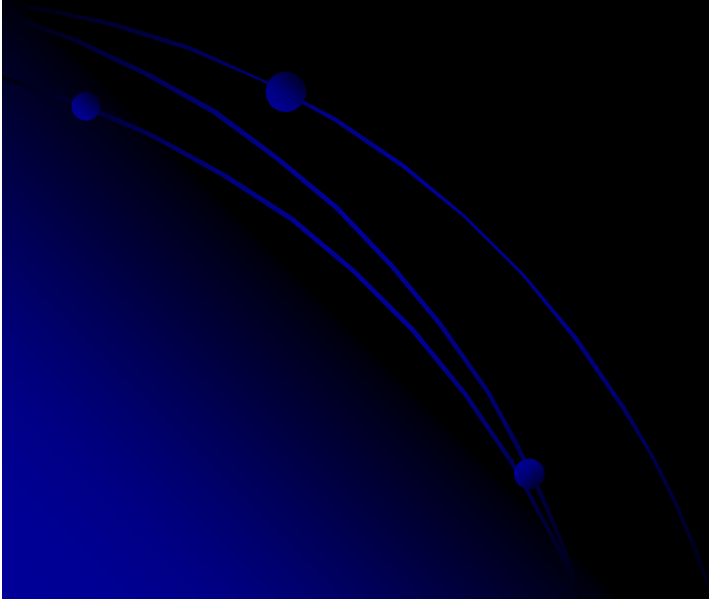
**By the age of 38.**



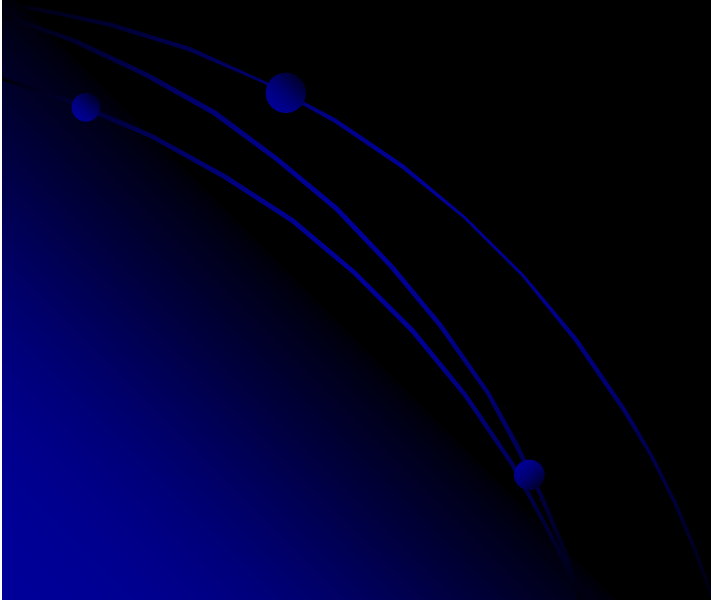
**According to the U.S.  
Department of Labor . . .**



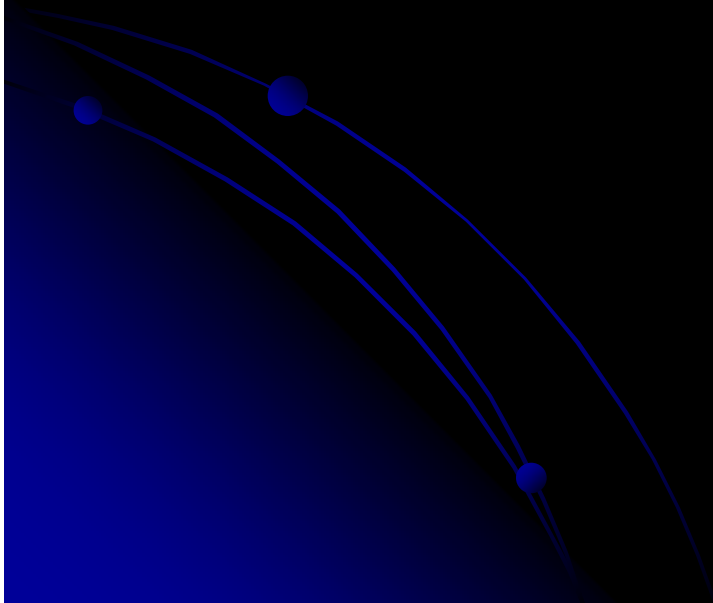
**1 out of 4 workers today is  
working for a company he has  
been employed by for less than  
one year.**



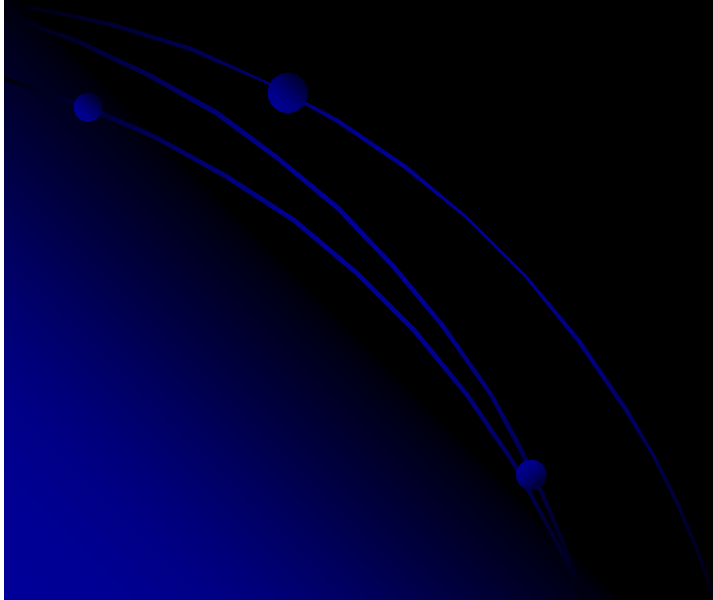
**More than 1 out of 2 are working  
at their current job for less than  
5 years.**



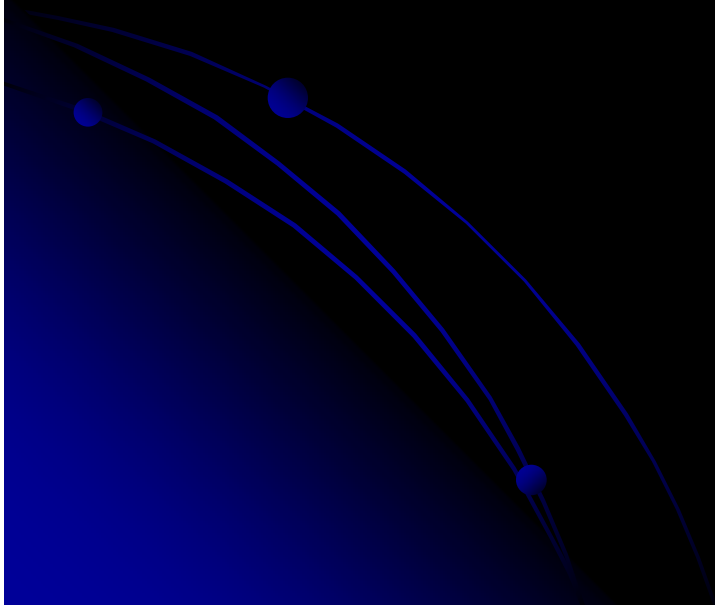
**The top 10 in-demand jobs in  
2010 didn't exist in 2004.**



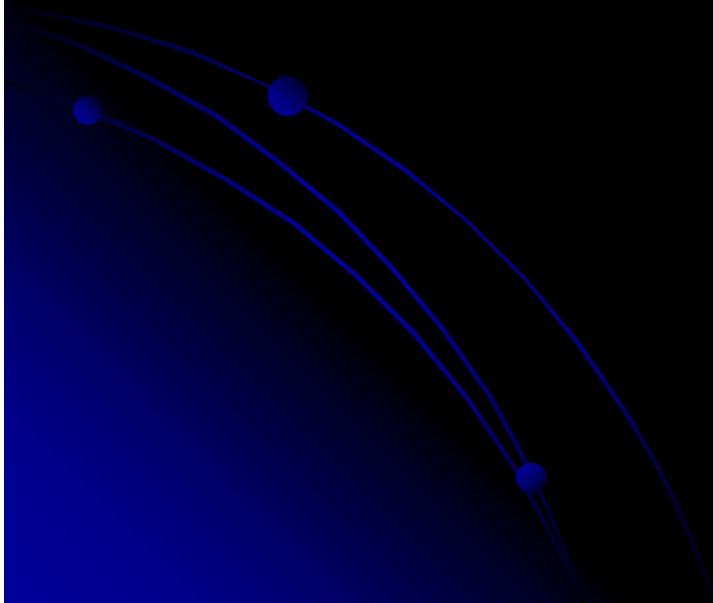
**Question for teachers:  
How do we prepare our students  
for 14 different jobs and several  
different careers?**



**We are currently preparing  
students for jobs that don't  
yet exist . . .**



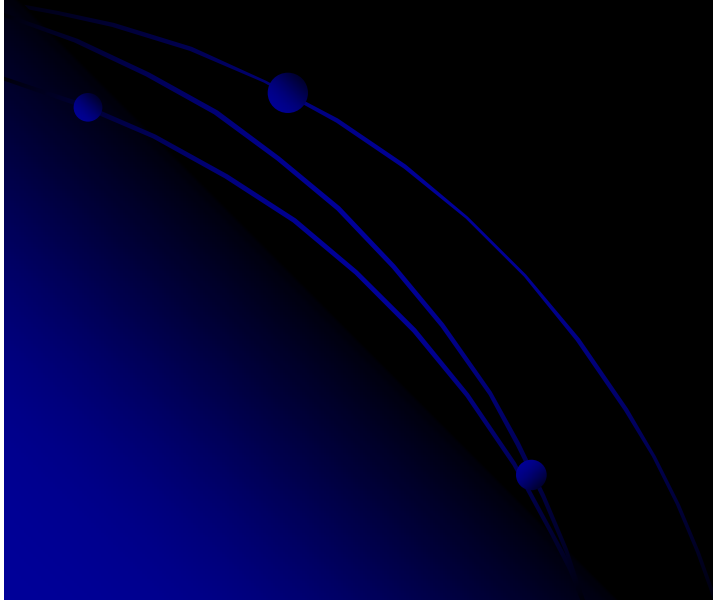
**using technologies that  
haven't been invented . . .**



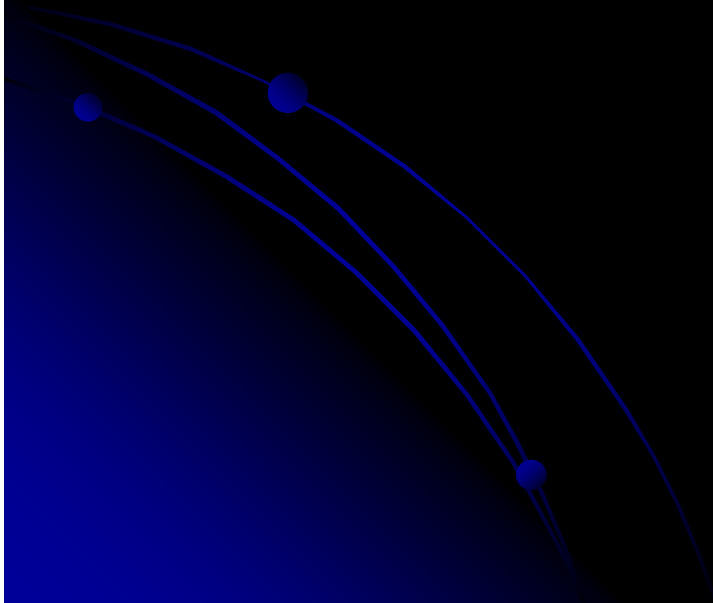
**in order to solve  
problems we don't even  
know are problems yet.**

David Warlick – Connect Learning blog

**Question for Administrators?  
How do we do this?**

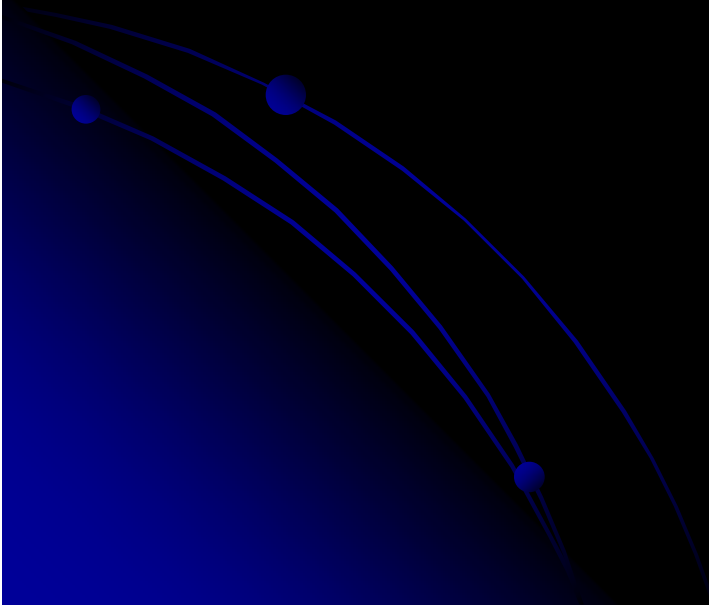


**Name this country . . .**

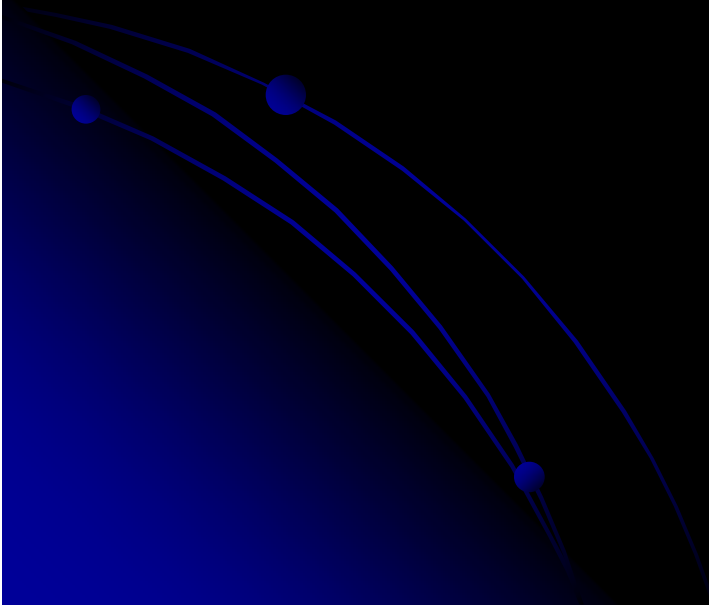


- Richest in the World
- Largest Military
- Center of world business and finance
- Strongest education system
- World center of innovation and invention
- Currency the world standard of value
- Highest standard of living

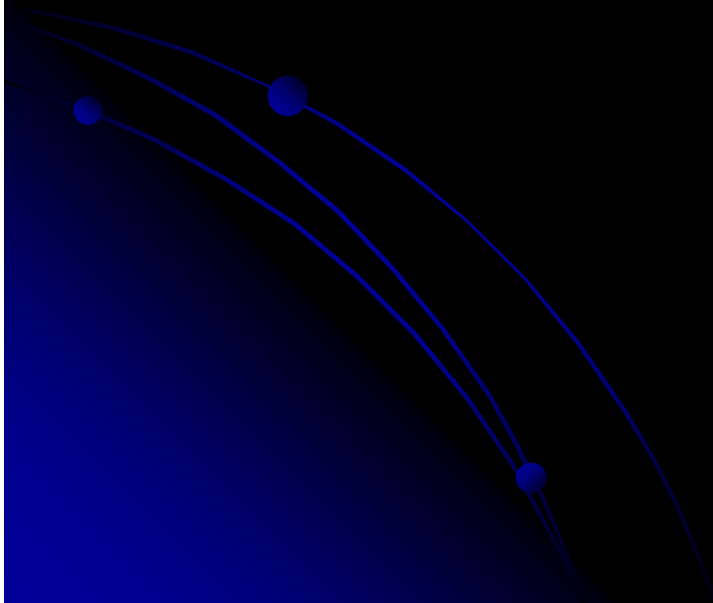
**England.**



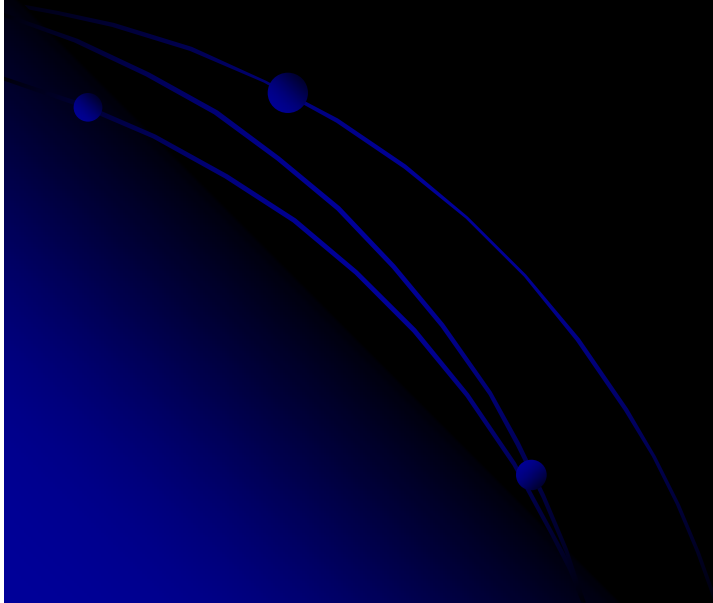
**In 1900.**



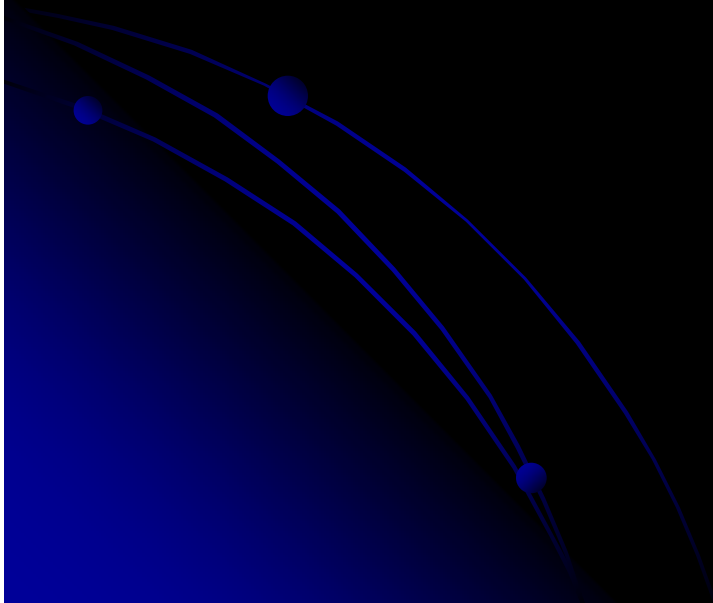
**Do you perceive a trend?**



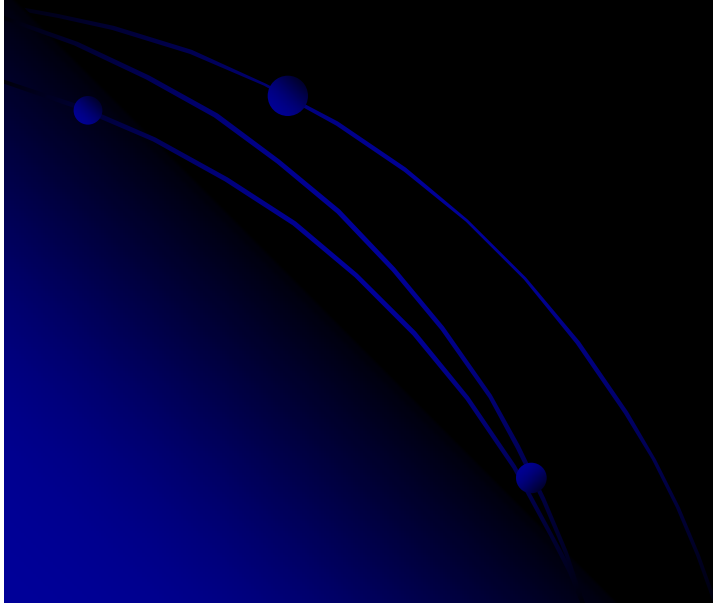
**Did you know . . .**



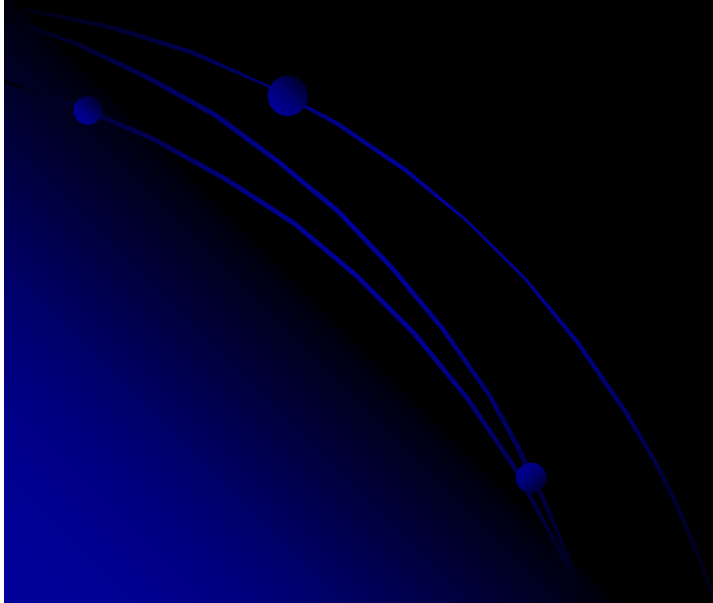
**The U.S. is 20<sup>th</sup> in the world in  
broadband Internet penetration.  
(Luxembourg just passed us.)**



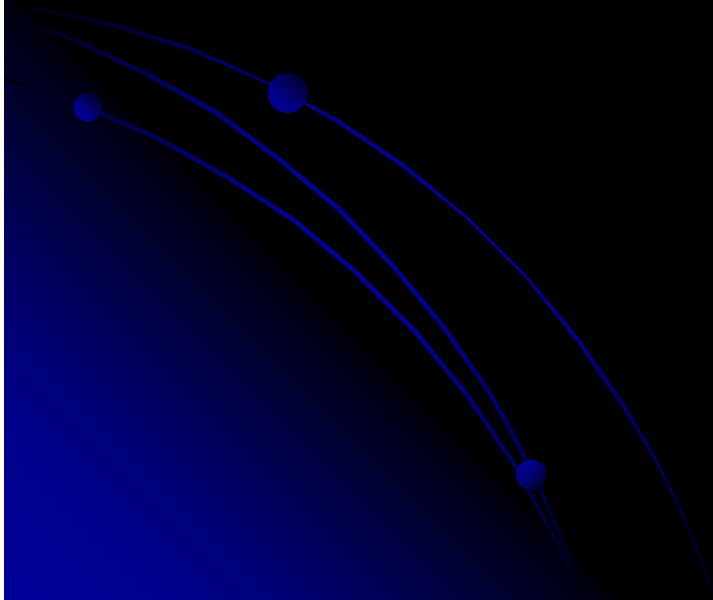
**In 2002 alone Nintendo invested  
more than \$140 million in  
research and development.**



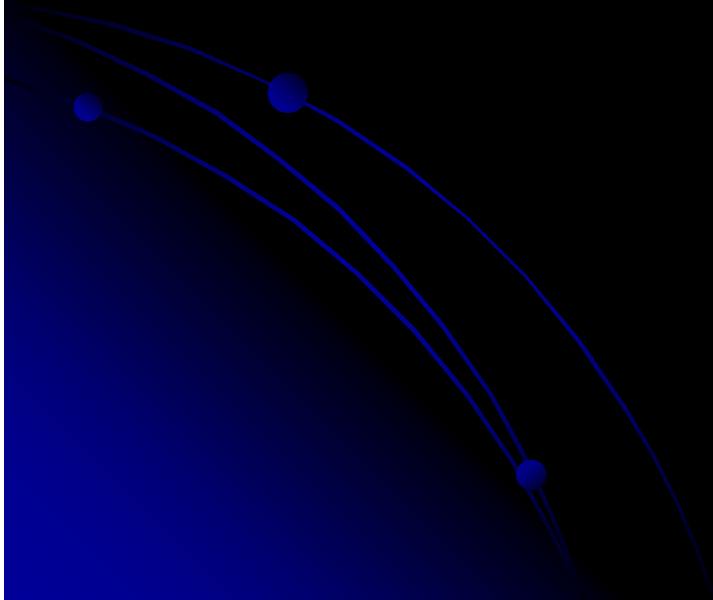
**The U.S. Federal Government  
spent less than half as much on  
Research and Innovation.**



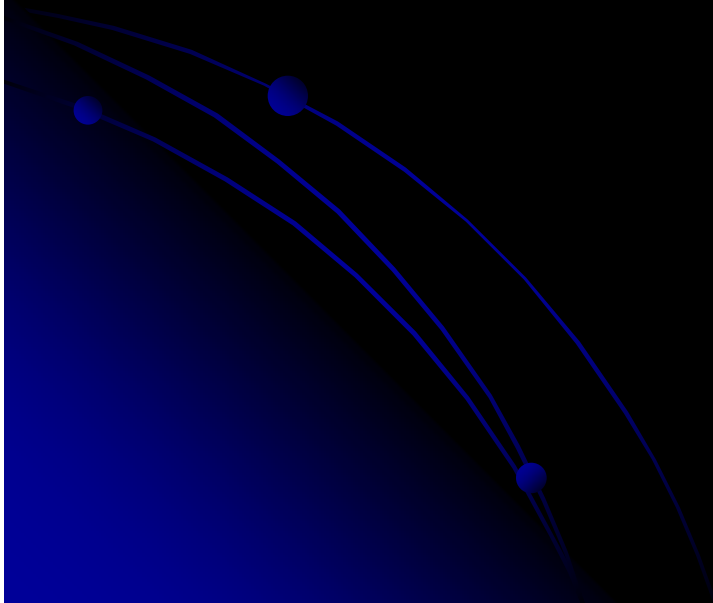
**1 out of every 8 couples  
married in the U.S. last year  
met online.**



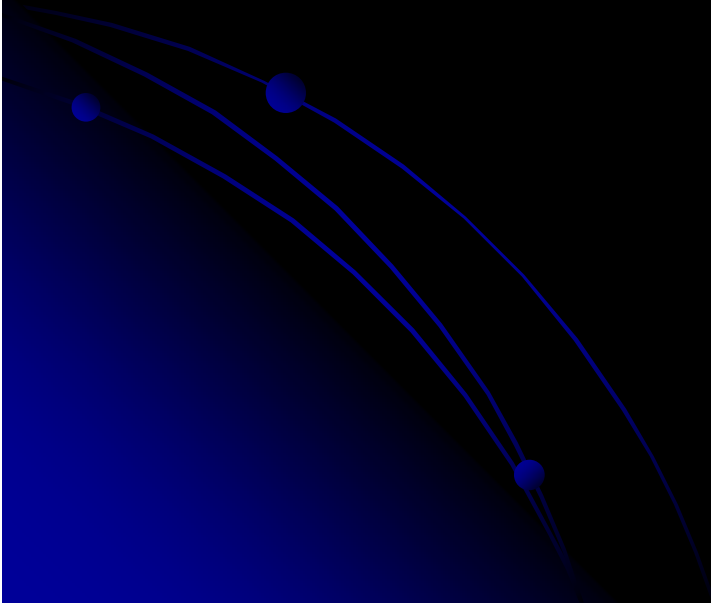
**There are over 100 million  
registered users of MySpace.  
(August 2006)**



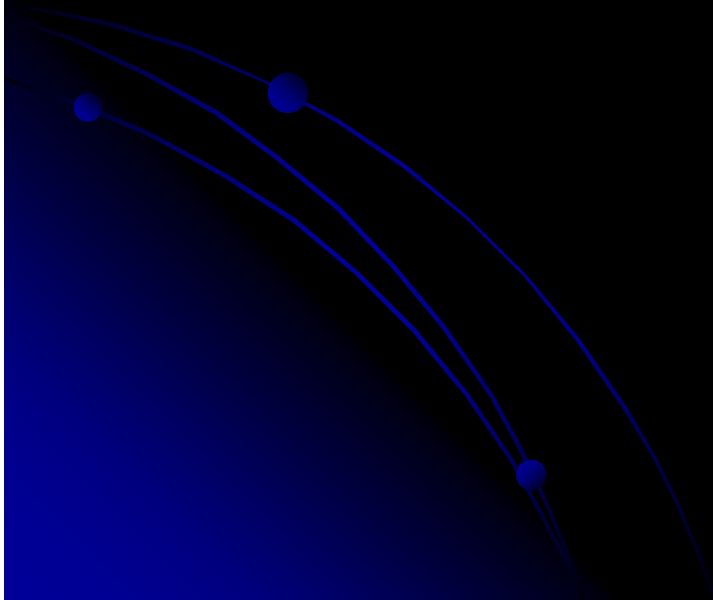
**The average MySpace page is  
visited 30 times a day.**



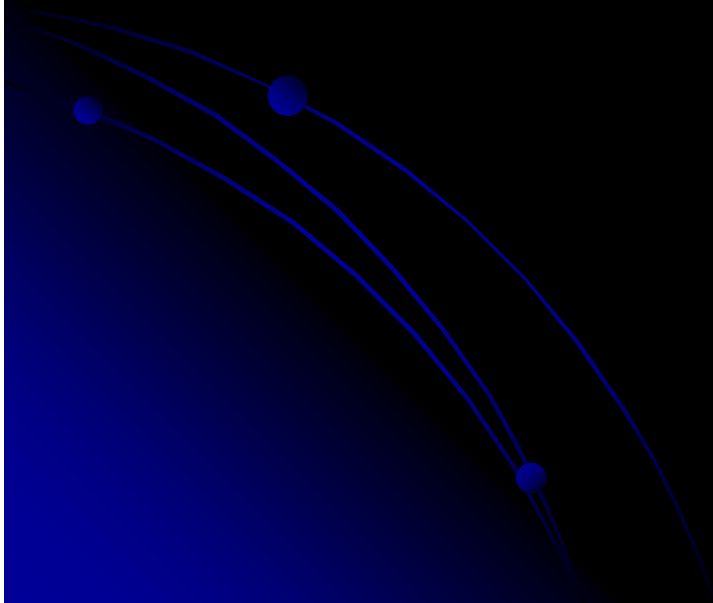
**Did you know . . .**



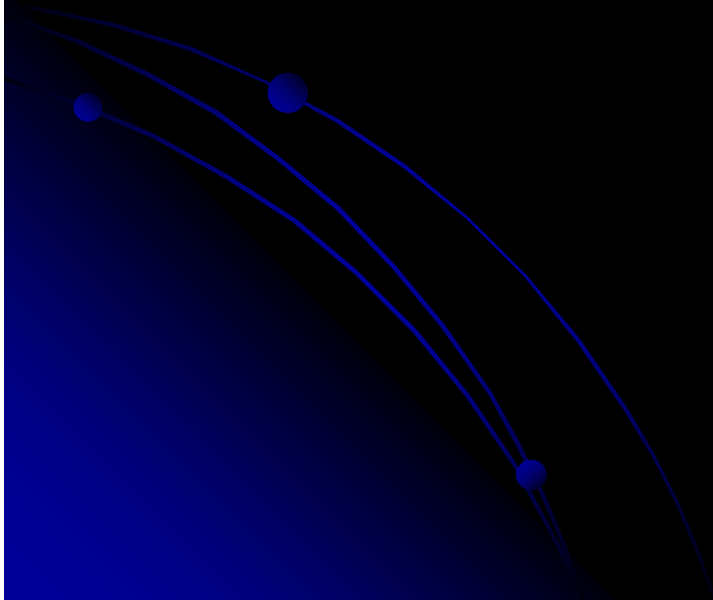
We are living in *exponential*  
times.



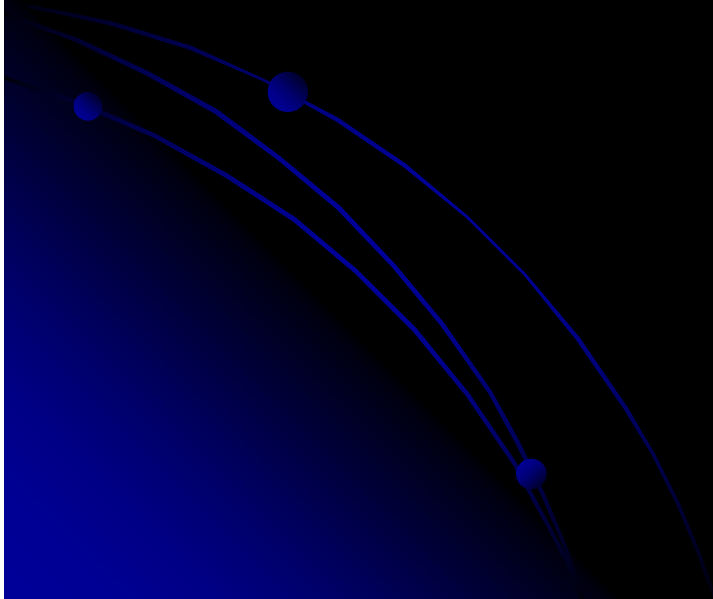
**There are over 2.7 billion  
searches performed on Google  
each month.**



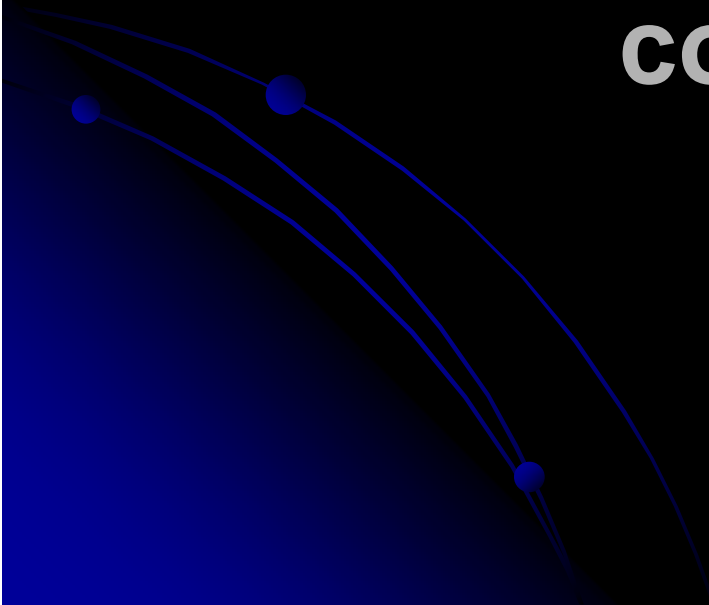
**To whom were these questions  
addressed B.G.?  
(Before Google)**



**The number of text messages  
sent and received every day  
exceeds the population of the  
planet.**



**By their 21<sup>st</sup> birthday, digital kids will have sent/received 250,000 emails/IMs, spent 10,000 hours on the phone, and watched 20,000 hours of TV (with 500,000 commercials).**

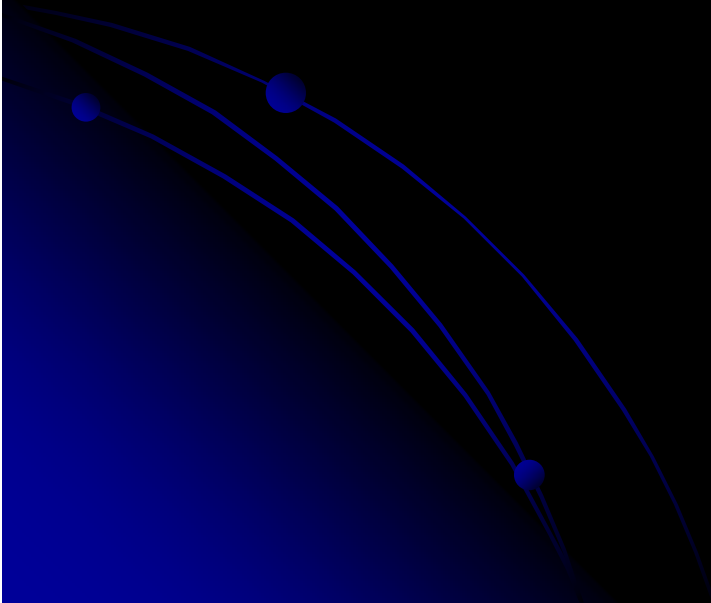


**Kids use electronic media 6.5  
hours a day into which they  
pack 8.5 hours of exposure to  
that media.**

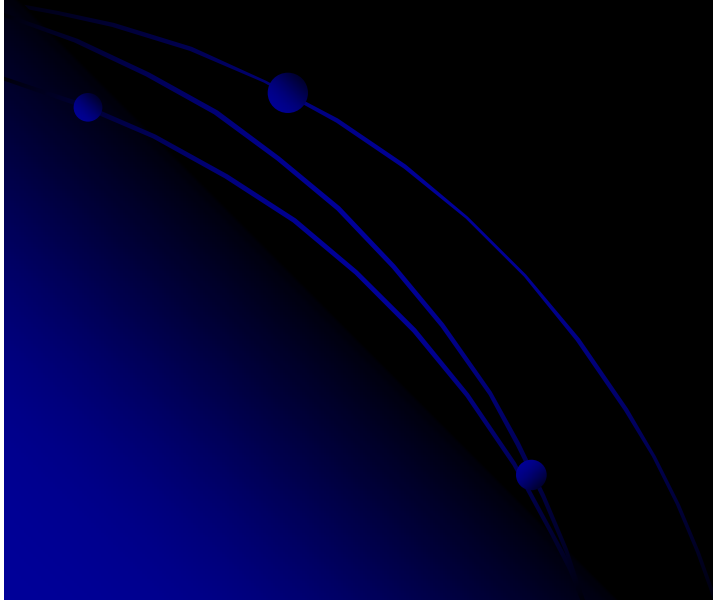
**How?**



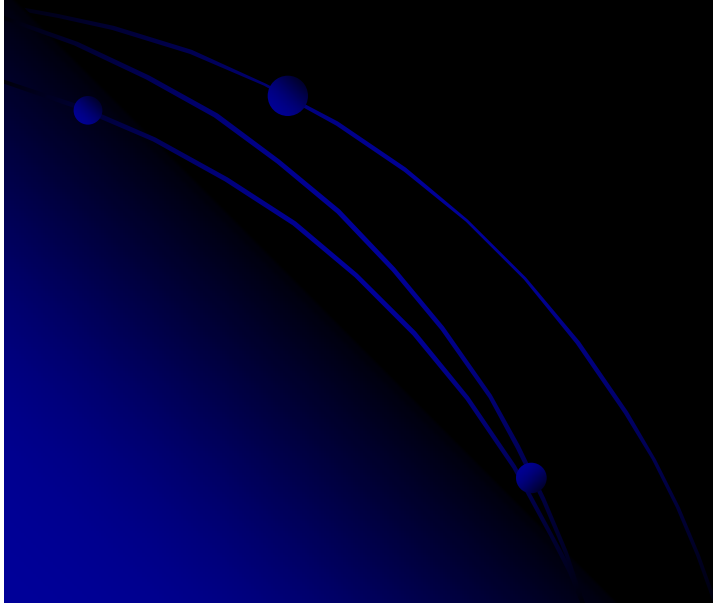
**They multitask.**



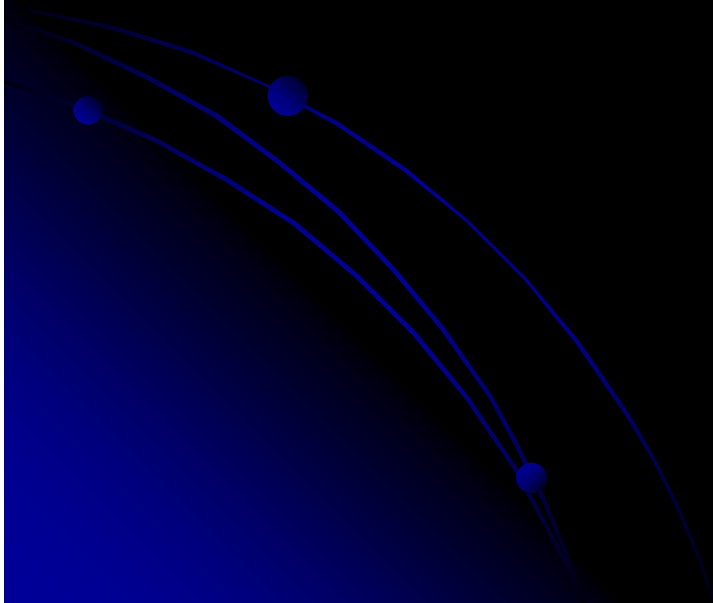
**There are about 540,000 words  
in the English language . . .**



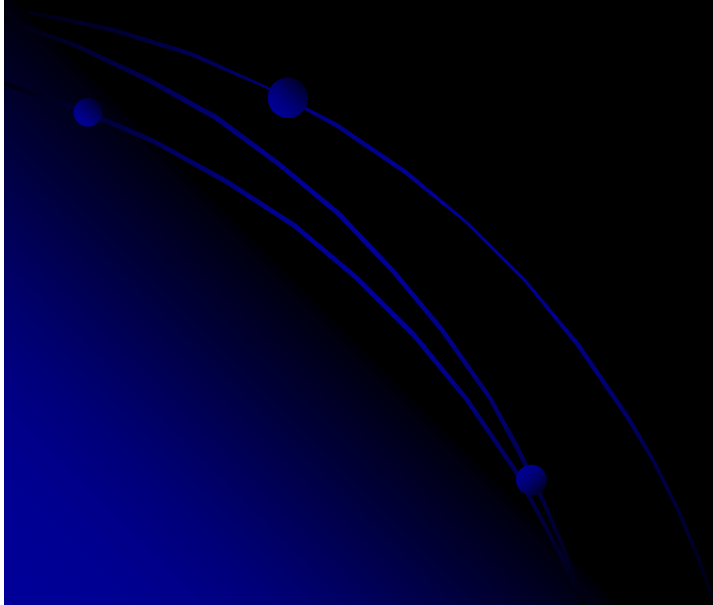
**About 5 times as many as  
during Shakespeare's time.**



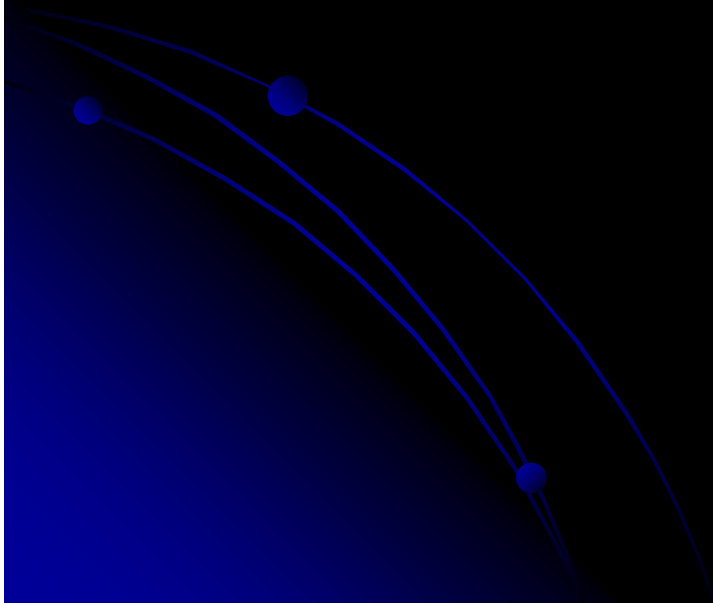
**More than 3,000 new books  
are published . . .**



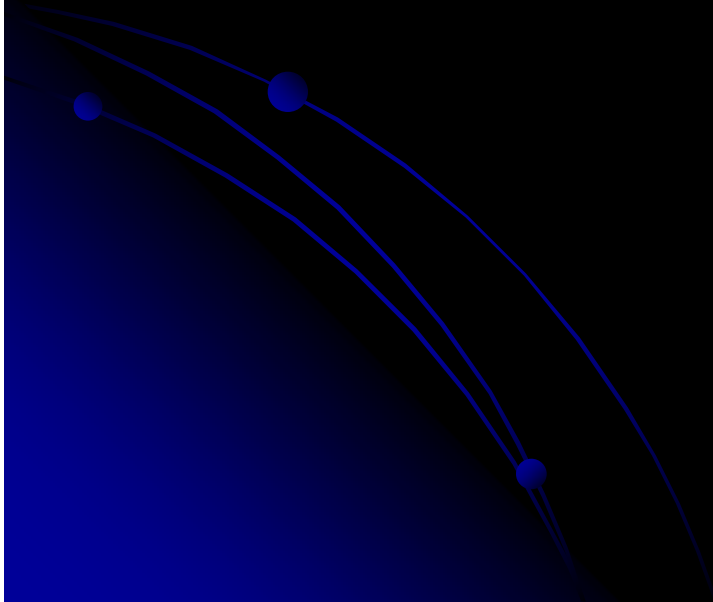
**Daily.**



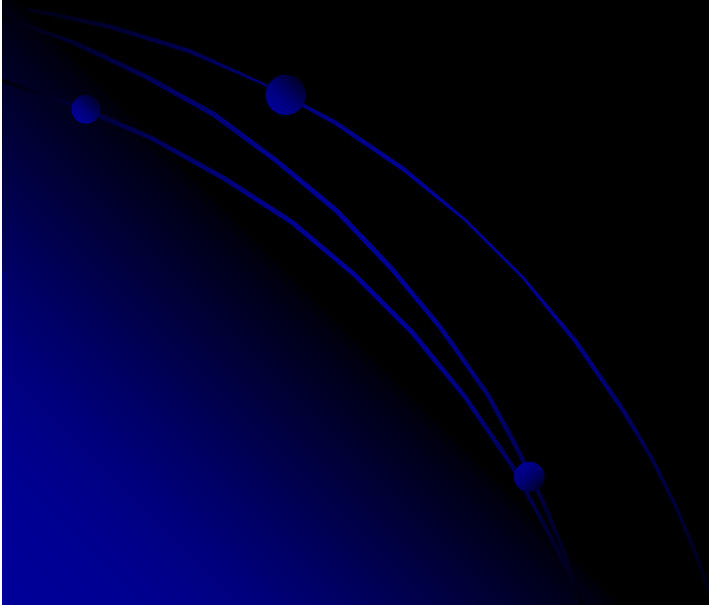
**It's estimated that a week's  
worth of *New York Times* . . .**



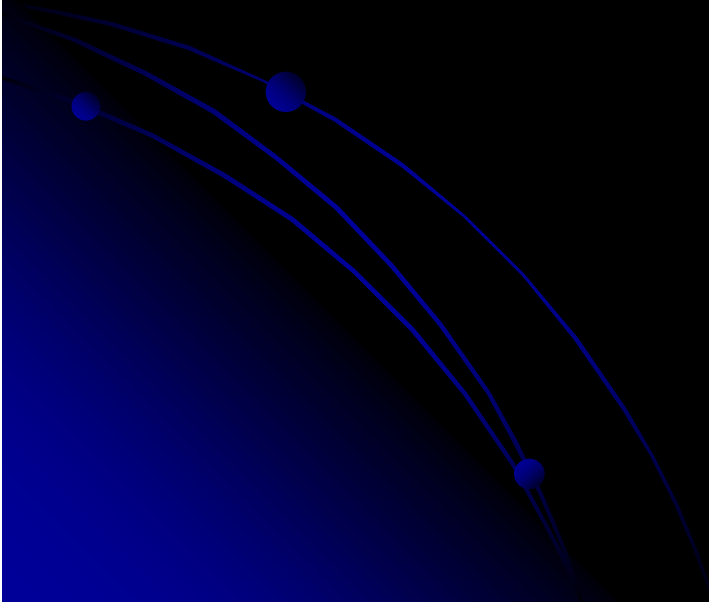
**Contains more information than  
a person was likely to come  
across in a *lifetime* in the 18<sup>th</sup>  
century.**



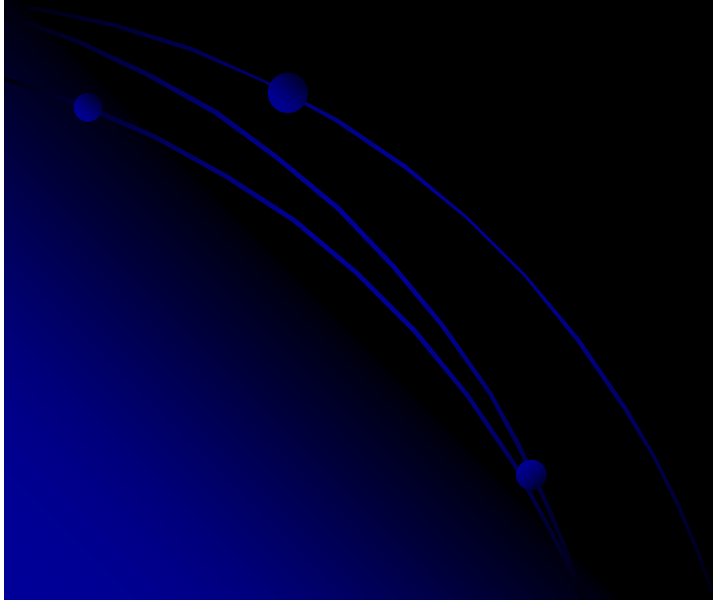
**Yet print newspapers will be  
extinct by the first quarter of  
2043.**



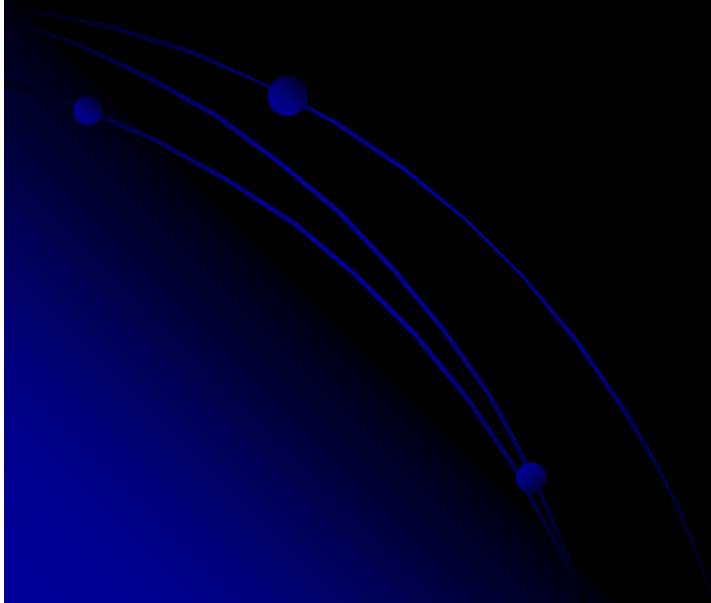
**It's estimated that 1.5 exabytes  
(that's  $1.5 \times 10^{18}$ ) of unique new  
information will be generated  
worldwide this year.**



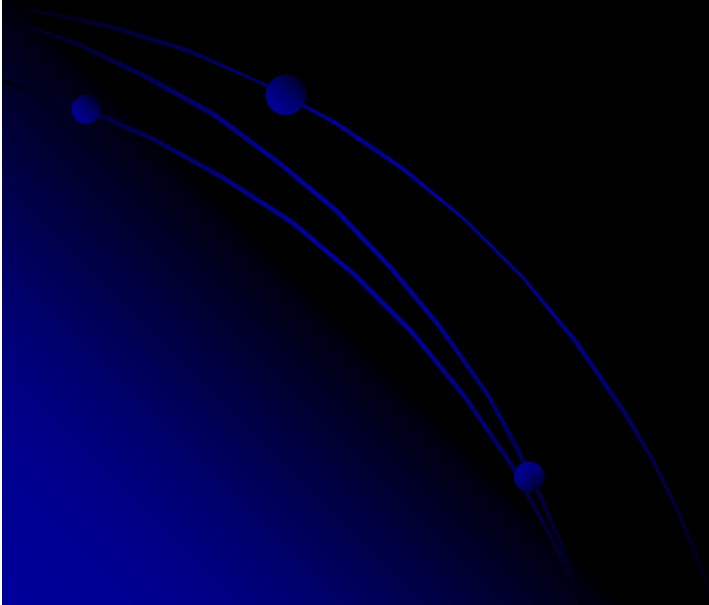
**That's estimated to be more than  
in the previous 5,000 years.**



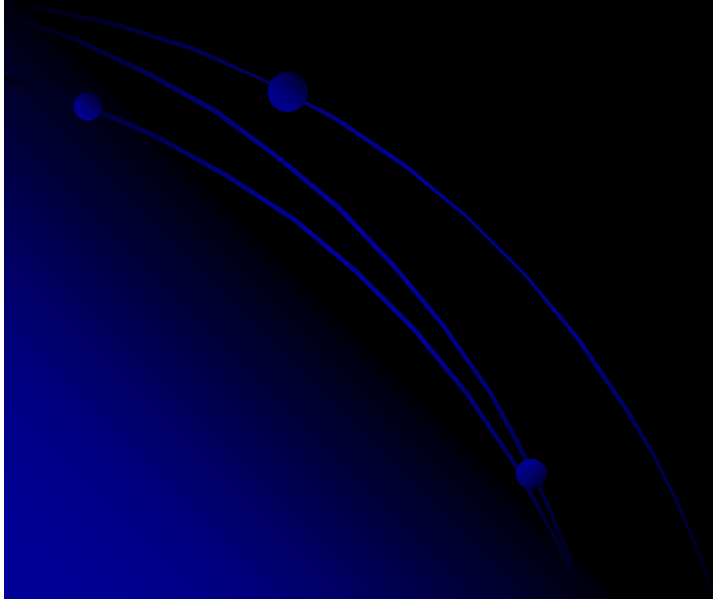
**the amount of new technical  
information is doubling every 2  
years.**



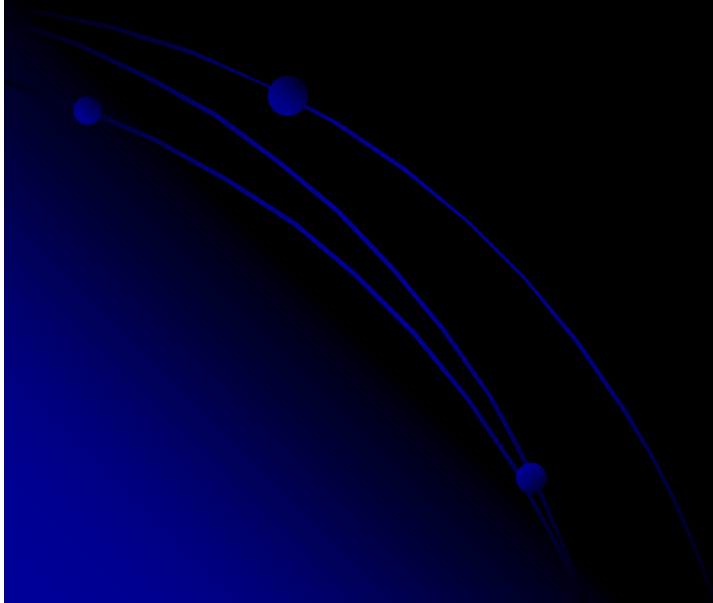
**That means for a student  
starting a four-year technical or  
college degree . . .**



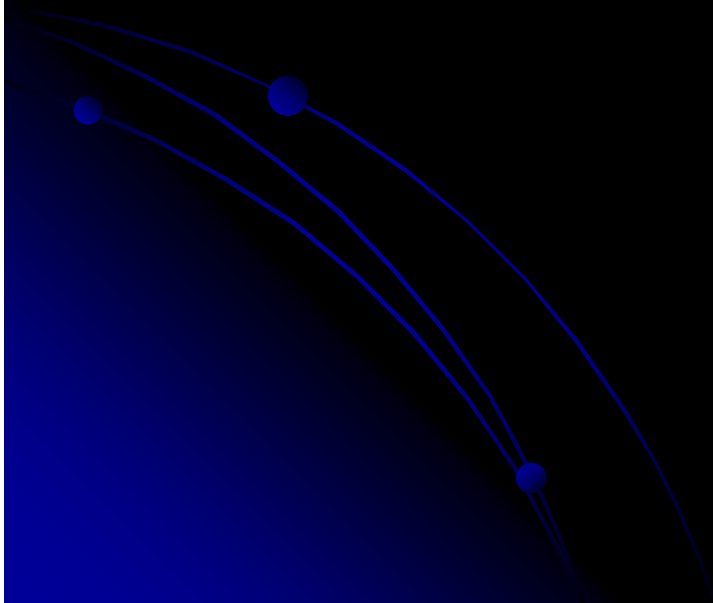
**Half of what they learn in their first year of study will be outdated by their third year of study.**



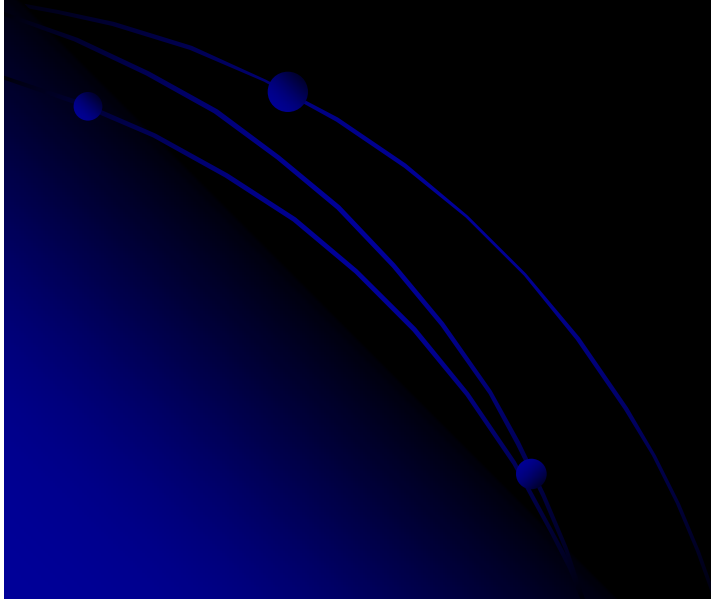
**It's predicted to double every  
72 hours by 2010.**



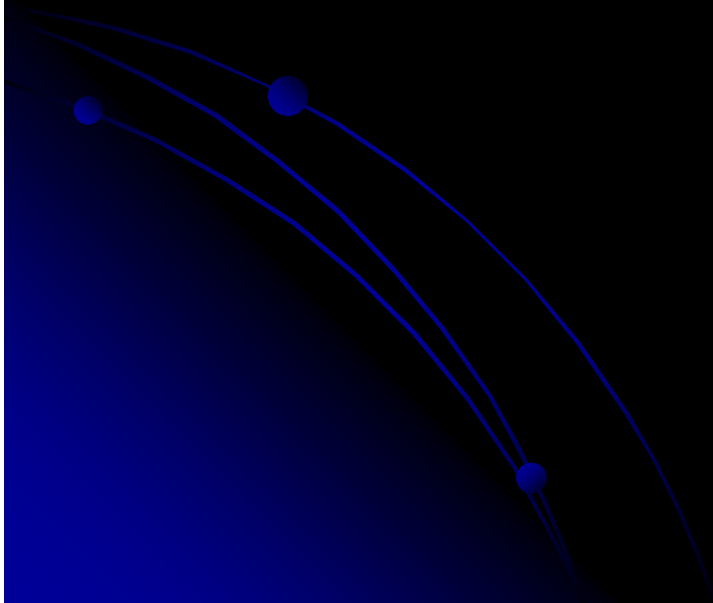
**Predictions are that  
e-paper will be cheaper than real  
paper.**



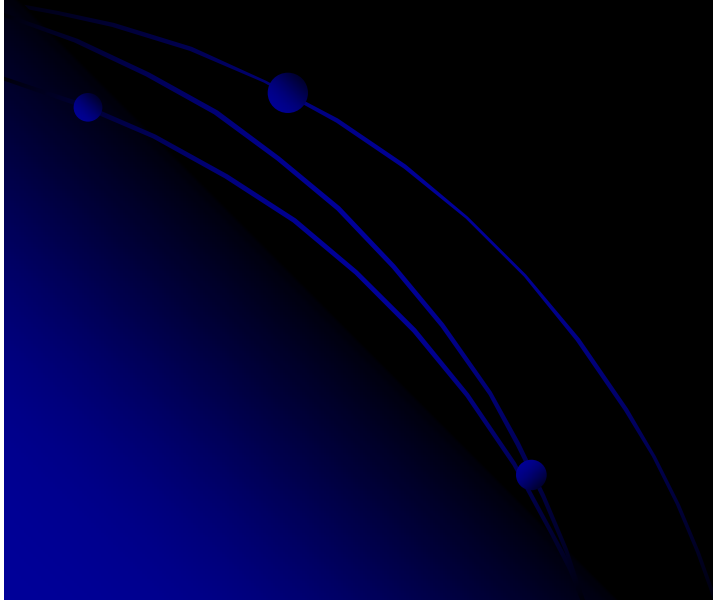
**And with the rapid and exponential growth of knowledge, does it make sense to publish it in a book?**



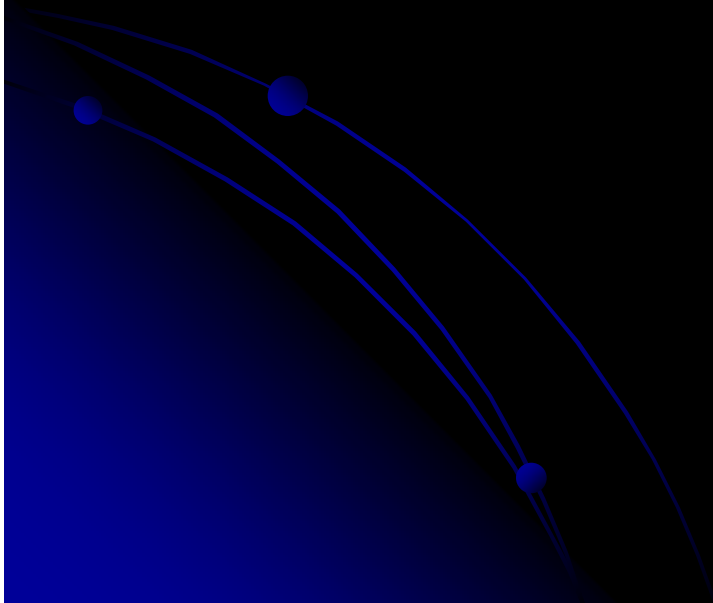
**Third generation fiber optics has recently been separately tested by NEC and Alcatel . . .**



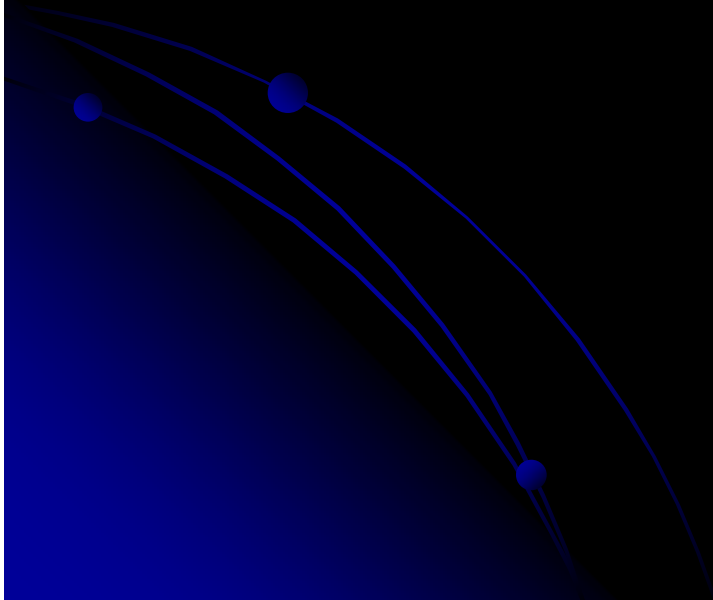
**That pushes 10 trillion bits per second down one strand of fiber.**



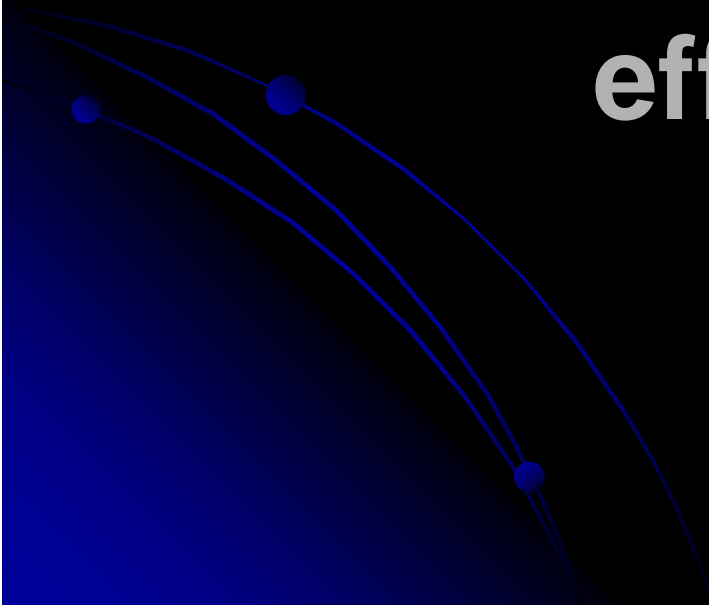
**That's 1,900 CDs or 150 million simultaneous phone calls every second.**



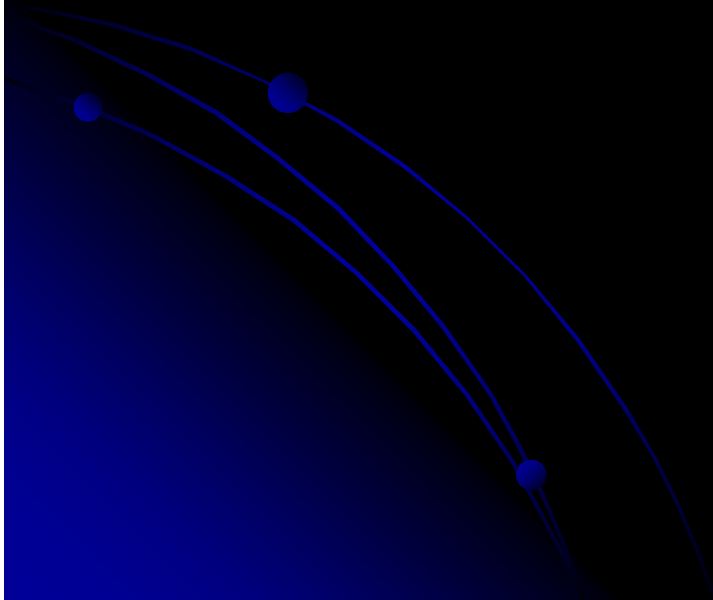
**It's currently tripling about every 6 months and is expected to do so for at least the next 20 years.**



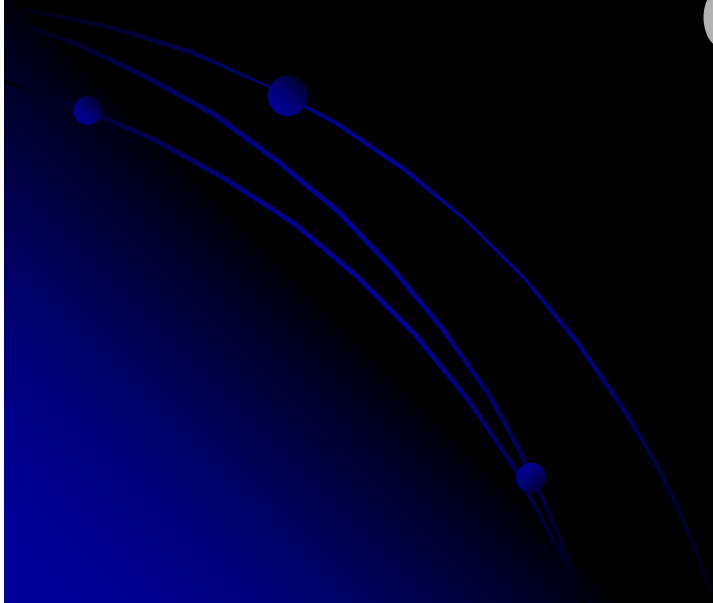
**The fiber is already there;  
switches are just being  
improved on the ends. . . . which  
means the marginal cost of  
these improvements is  
effectively \$0.**



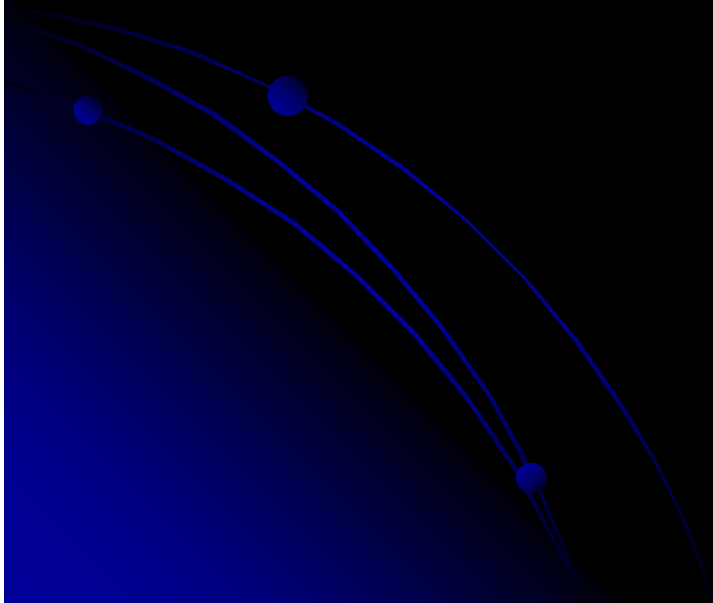
**47 million laptops were shipped worldwide last year.**



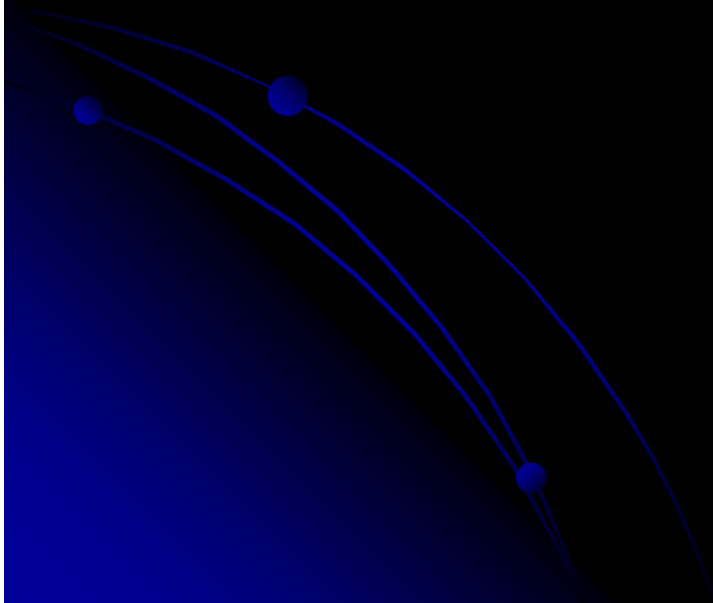
**The \$100 laptop project is expecting to ship between 50 and 100 million laptops a year to children in underdeveloped countries.**



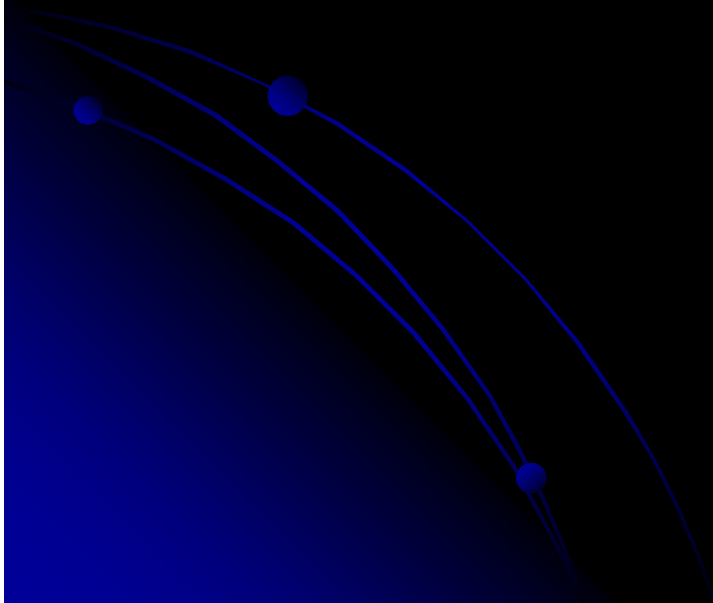
**Predictions are that by 2013 a  
supercomputer will be built that  
exceeds the computation  
capability of the Human  
Brain . . .**



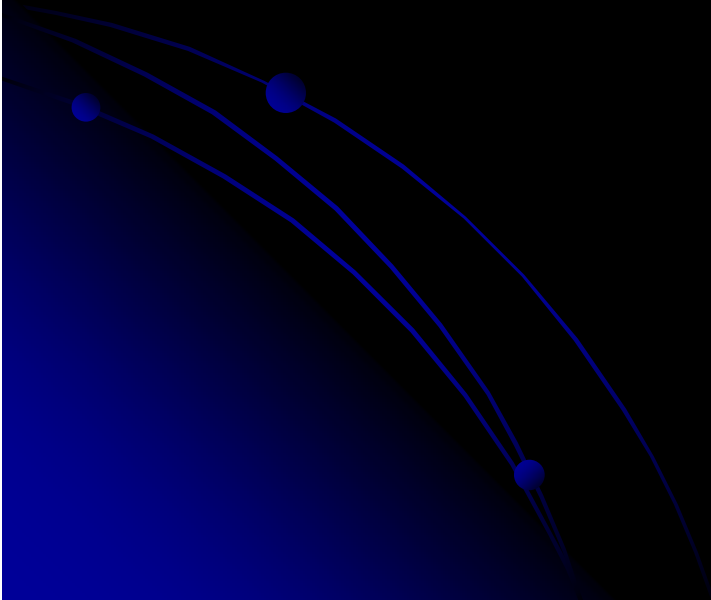
**By 2023, a \$1,000 computer will  
exceed the capabilities of the  
Human Brain . . .**



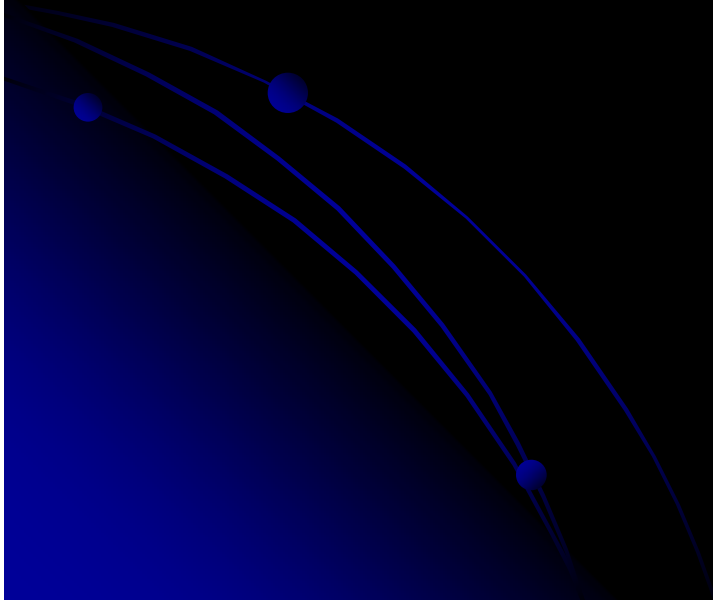
**First grader Abby will be just 23  
years old and beginning her  
(first) career . . .**



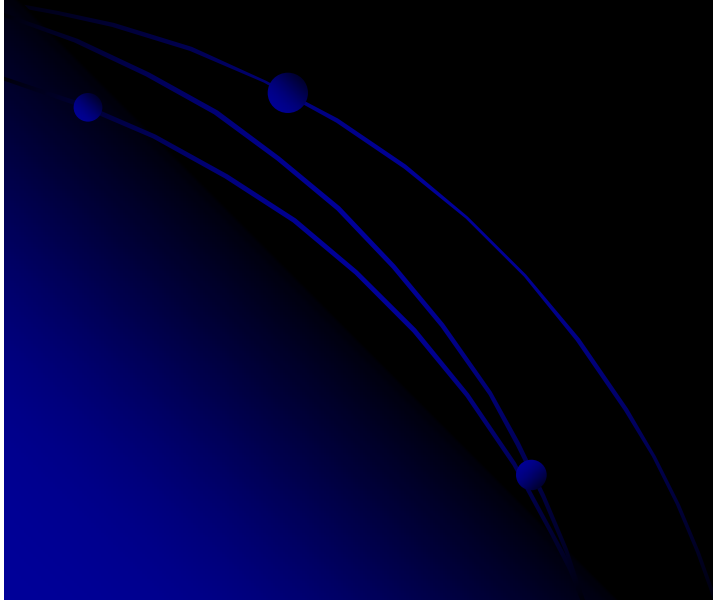
**And while technical predictions  
farther out than about 15 years  
are hard to do . . .**



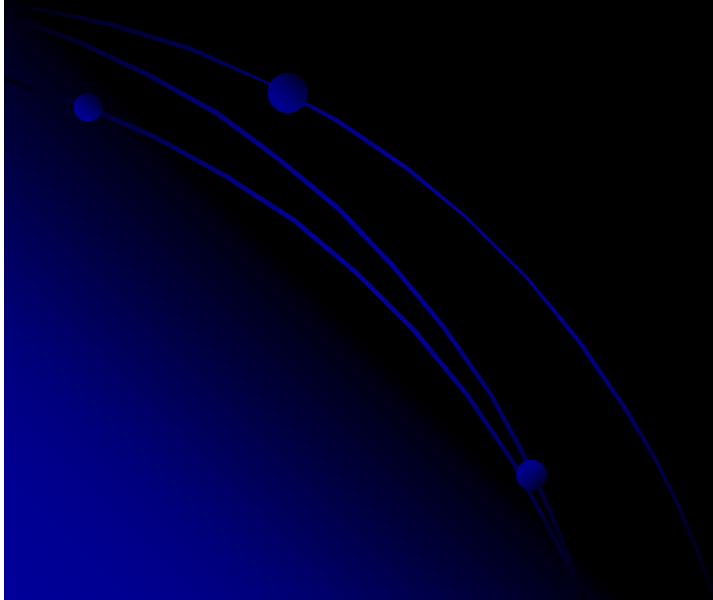
**Predictions are that by 2049 a  
\$1,000 computer will exceed the  
computational capabilities of the  
*human race.***



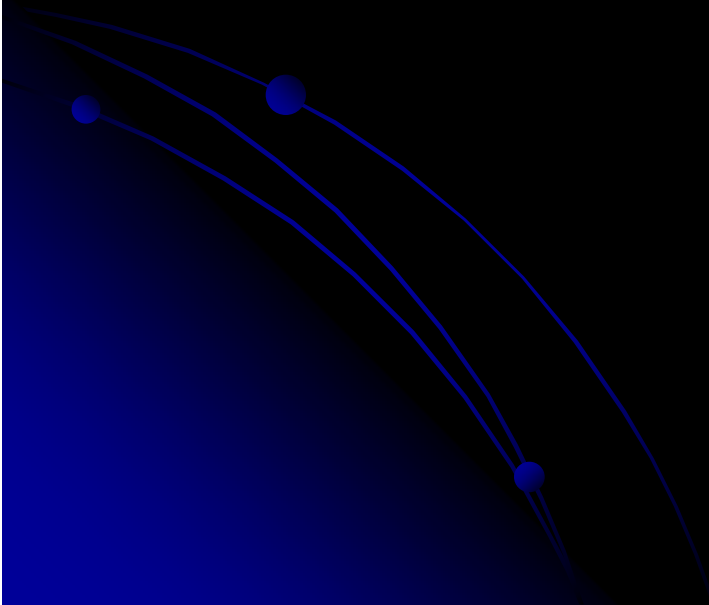
**Number of iPod sold in 3Q  
2006 = 8,100,000**



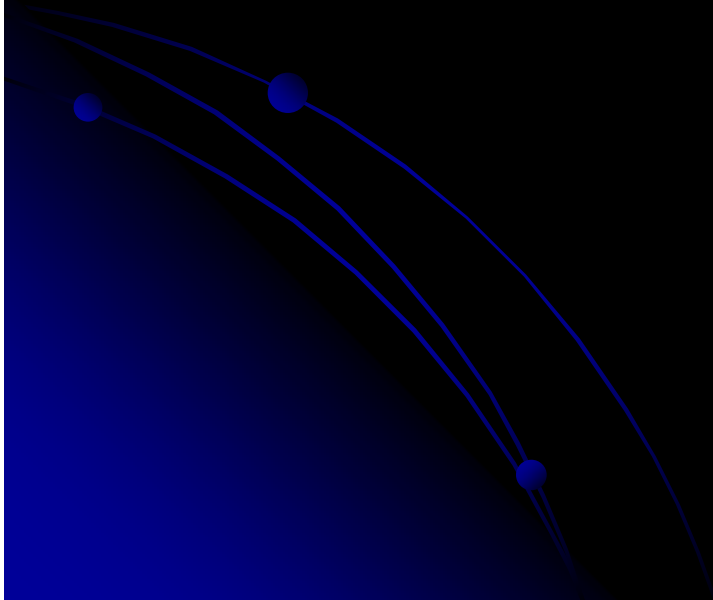
**Up from 304,000 exactly  
three years ago**



**College freshmen identify  
the iPod as more “in” than  
beer.**



**What does it all mean?**



**Preparing our children for a future that we cannot even describe requires of educators more than we have ever expected before.**



David Warlick

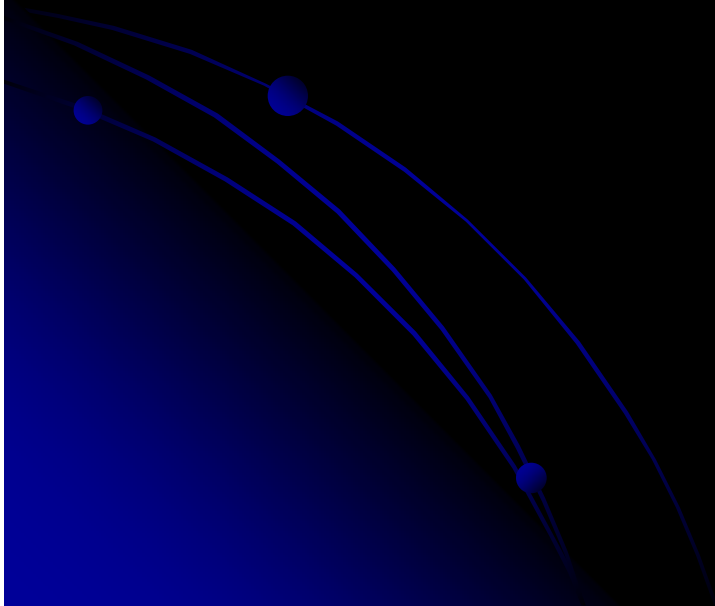
# Shift Happens.

Modified. Originally created by **Karl Fisch**,  
Arapahoe High School, Centennial, Colorado

The Fischbowl

<http://thefischbowl.blogspot.com/>

Now *you* know . . .



**Why** you might want to  
know a bit about . .

