

**From:** David Crofts [mailto:david.crofts@gmail.com]  
**Sent:** 28 January 2013 23:51  
**To:** 'ODEDM@il.ibm.com'  
**Cc:** 'oded.margalit@gmail.com'  
**Subject:** RE: FW: IBM Quantum Computer Stupidity  
**Attachments:** [Have you realized your error yet IBM.pdf](#)

Hello Oded,

One must accept that one's existence is imperfect, because of the disturbing influences originating from those opposite sexed entities with which we are "logically-constrained" to share our Universe with, and with which our lives would be infinitely poorer without :- but your "logic-is-flawed" if you actually think that you can build a "computing-machine" that is "discrete" "logically-correct" and "self-contained" based upon this "principle-of-creation" as far as the "deliberate-realization-of-imperfection" is concerned !!!!

Please let me change my approach to this problem a little and let me quote as "evidence"; a recent news story that I heard reported last night while I was lying in bed. The URL quoted below supports my "arguably-paranoid-belief" that there exists out there, a small minority of "complete-arseholes" that actually think that when they provide a deliberately and meticulously constructed "completely-false" "load-of-bullshit", as a supposedly accurately reported retelling of the facts surrounding an "interesting" "observable" and "news-worthy" "happening-out-there", they are actually performing a "valuable-service", so long as they are "logically-consistent" with their taking of the "truth" into account. As they perform this "well-understood-exercise" in "reverse-engineering" they must not obstruct the "determined-investigator" from his goal, which is to learn, with a view to understanding, "what-the-real-facts-are-all-about" in this "crock-of-shit" !!!!

-----Original Message-----

From: David Crofts [mailto:david.crofts@gmail.com]  
Sent: 28 January 2013 20:41  
To: 'news@sky.com'  
Subject: <http://news.sky.com/story/1043410/payday-loan-sites-dirty-tricks-to-boost-traffic>

SUBJECT :- ( ( 2 Toyed ) ( You Over ) ( Until The Day - Voyed / Pay - Toyed / Incorporate-Toyed )) (( Day Comes )) :- (( Can ( Pay Toyed )) ( Your ( Day Toyed ))) :- Loan Out ....

<http://www.linkedin.com/company/david-crofts-incorporated>

Jason Farrell, you should feel ashamed to have your name associated with this obvious and transparent tissue of blatant lies; and if you chose to deliberately falsely re-present true reality to the public, despite the fact of having to suffer the consequences of this clearly faulty business practice mentality, as to what constitutes the correct working attitude; this goes double !!!!

Dear Sky-News-Editorial-Staff-Member,

Please ask the editor in question to explain to me his refusal to publish my comments :-

As they really are simply boiled down to the statement :-

"I believe your co-respondent to have deliberately told an un-truth !!!!"

Surely, this is my problem, and not "un-justly" deforming the reputation of anyone else but myself !!!!

-David Crofts

-----Original Message Resumes-----

((((

Do you feel paranoia 2, when I say once again, "Schitzoid, Goo-Boyed, Bullshit-Toyed !!!!" and consider my Lynne-Ked-Din company connection 2, the entity "Pay/Day-Vid-Crofts-Incorporate-Toyed !!!!

I have an Google Ad-Words Advert-Toyed, which points 2 :-

<http://www.linkedin.com/company/david-crofts-incorporated>

(( My Hacked UP Website URL ...  
(( Which leads the Google searcher ...  
(( UP a dark ally of ...  
(( Hacked UP Cheese !!!! ))))))))

... and the following URLs flow out from here, 2 the interested clicker :-

My Google-Site :-

<http://www.davidcrofts.com.au>

My Facebook Webpage :-

<https://www.facebook.com/david.crofts.incorporated>

)))

My fantasy is, that this "false" documenting one's fantasies as "truth", is what IBM is guilty of; and when it behaves like one of these deliberate spreaders of "falsehood", it is only putting out this "rubbish" concerned with the "Quantum-Computer-Absurdity" because it considers this "output" as "valuable-output", and indeed the outputting of "good-work" !!!!

Sincerely,

-David Crofts

P.S.

In reality, it is "bad-work" because any, and indeed all, "alternative" "outputtings" would be an improvement ...

-----Original Message-----

From: David Crofts <david.crofts@gmail.com>

To: ODEDM@il.ibm.com

Cc: oded.margalit@gmail.com

Subject: RE: FW: IBM Quantum Computer Stupidity

Date: Thu, 17 Jan 2013 14:32:07 +1100

Hello Oded,

IBM appears to be well ahead of me Oded !!!!

Although not a perfect correction, this is good enough :-

<http://www.youtube.com/watch?v=gQ3HEVeIBFY&list=PL8F612EF09E3798A5>

-David Crofts

-----Original Message-----

From: David Crofts <david.crofts@gmail.com>  
To: ODEDM@il.ibm.com, oded.margalit@gmail.com  
Subject: FW: IBM Quantum Computer Stupidity  
Date: Tue, 15 Jan 2013 22:26:41 +1100

This cusp is in serious need of a @\$%\$#@ blunting !!!!

----- Forwarded Message -----

From: David Crofts <david.crofts@gmail.com>  
Reply-to: <dasc1961@netscape.net>  
To: Crofts, David <dasc1961@netscape.net>  
Subject: IBM Quantum Computer Stupidity  
Date: Sun, 4 Mar 2012 23:47:36 +1100

<http://www.engadget.com/2012/02/28/ibm-quantum-computing/>

**From:** David Crofts <david.crofts@gmail.com>

**Sent:** Thursday, 31 January 2013 06:06 AM

**To:** news@sky.com

**Subject:** RE: <http://news.sky.com/story/1043410/payday-loan-sites-dirty-tricks-to-boost-traffic>

**Jason Farrell :- Sky Correspondent :- Wrote :-**

(((-----BULLSHIT----BULLCRAP----//-----BULLSHIT----BULLCRAP----//-----BULLSHIT----BULLCRAP----//-----BULLSHIT----BULLCRAP----))))

(((-----BULLSHIT----BULLCRAP----//-----BULLSHIT----BULLCRAP----//-----BULLSHIT----BULLCRAP----//-----BULLSHIT----BULLCRAP----))))

(((-----BULLSHIT----BULLCRAP----//-----BULLSHIT----BULLCRAP----//-----BULLSHIT----BULLCRAP----//-----BULLSHIT----BULLCRAP----))))

(((-----BULLSHIT----BULLCRAP----//-----BULLSHIT----BULLCRAP----//-----BULLSHIT----BULLCRAP----//-----BULLSHIT----BULLCRAP----))))

**“A” Sky News “investigation” has “found” that some “pay-on-the-day-of-pay” “loan-brokers” have “benefit” “ted” from “hacking” :-**

**“IN” :-**

**(2) Websites :-**

**(1) Diverting :-**

**The “History” & “Status” “Data” :-**

**“AWAY-FROM” :-**

**“Google-Legitimate” “Website-Holes” ... ( that Google “Hooks” these supposedly-valuable-data-particles “OUT” of ... ) ...**

**(( && “INTO” “OTHER” )) :-**

**“Google-Legitimate” “Website-Holes” ... ( that Google “Hooks” these supposedly-valuable-data-particles “OUT” of ... ) ...**

**(( && We “FEEL” this to be a “DIRTY-TRICK” on Google. ))**

**(( && We “FEEL” :-**

**(1) “TRICKS” Google and its Clientele, “IN” :-**

**(2) “GOING-UP” a “DARK-ALLY”.**

**Which “EXISTS” :-**

**“IN” :-**

**The “domain” of a “criminal” “pay-on-the-day-of-pay” “loan-broker” !!!! ))**

(((-----BULLSHIT----BULLCRAP----//-----BULLSHIT----BULLCRAP----//-----BULLSHIT----BULLCRAP----//-----BULLSHIT----BULLCRAP----))))

(((-----BULLSHIT----BULLCRAP----//-----BULLSHIT----BULLCRAP----//-----BULLSHIT----BULLCRAP----//-----BULLSHIT----BULLCRAP----))))

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(((-----BULLSHIT----BULLCRAP----//-----BULLSHIT----BULLCRAP----//-----BULLSHIT----BULLCRAP----//-----BULLSHIT----BULLCRAP----))))

This article is obviously the work of a deliberate liar or an insanely deluded mind, because you are clearly spreading the “false” belief that “hackers” can do the impossible !!!!

You are asking me to believe there is a “realistic-possibility” of “economic-benefit”; for the “hackers” in question, and/or their pay-day-loan-broker “masters”; to go “against” the natural hackers “inclination” of “performing” wonton acts of “destruction” ( and do the reasonably impossible ) and “**constructively-identify**” “**what**” & “**where**” the ( desirable dirty cheese ) “**data**” is; ( and also do the definitely impossible ) and “**constructively-transfer**” ( if not to “where” the “hacker” is “located” but ) to the “**centre**” of an “**illegitimate-pay-day-loan-brokers-domain**” ( and their dirty cheese traffickers, dirty cheese funnel opening ) :- this “**data**”.

**(( Which you are asking me to believe “google” legitimately “trawls” “outside-itself” for; regardless of the fact that this practice goes against everything a logically correct “goo-boy” would do !!!! ))**

This above “hacker-acts” of “constructive-identification” & “data-transfer” could “only” be of “economic-benefit” to a “logically-flawed” “goo-girl” as a “goo-boy” would consider this “shit” and “irrelevant” and have “optimized” any “need” to perform this sort of “action” out of “his” “computer-systems” a long time ago.

This above “hacker-acts” of “constructive-identification” & “data-transfer” “**beggars-belief**” as one is being asked to believe in the existence of **the clearly mind bogglingly impossible exploitation of a “mechanical-flaw”** ...

**(( which clearly does not exist anywhere but in your correspondents deluded mind, and those that are similarly deluded about reality, as I understand it ))**

**(( which magically does not annihilate both “hacker” and “anti-hacker” in an explosion of “goo” courteously provided by goo “girl” ))**

**(( which indicates an “unbelievable degree of sophisticated understanding” of the logically flawed data processing mentality of “google”, for ...**

**(( which a criminal hacker has yet to be made to pay up, for having the under-standing that this kind of activity actually pays off ...**

Sincerely,

-David Crofts

P.S.

As the “Goo” of any “Value” here should has always be located “in” the “servers” at “Google HQ”, the tricky traffickers of cheese, and their dirty cheese funnelling tricks, from one dirty cheese funnel to another, are clearly irrelevant to any logical “goo-boy”, and the fact this has become an issue at all is a sad and sorry reflection on all those concerned !!!!

P.P.S.

The very “**structure**” of your recent “**addition**” to your story, and your choice of the words “**history**” & “**status**”, nails you, for me, as a simple peddler of bullshit !!!!

**From:** David Crofts [mailto:david.crofts@gmail.com]

**Sent:** Monday, 28 January 2013 08:41 PM

**To:** news@sky.com

**Subject:** <http://news.sky.com/story/1043410/payday-loan-sites-dirty-tricks-to-boost-traffic>

SUBJECT :- ( ( 2 Toyed ) ( You Over ) ( Until The Day - Voyed / Pay - Toyed / Incorporate-Toyed )) (( Day Comes )) :- (( Can ( Pay Toyed )) ( Your ( Day Toyed ))) :- Loan Out ....

<http://www.linkedin.com/company/david-crofts-incorporated>

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-David Crofts

Sky ID :- DASC1961

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<http://www.davidcrofts.com.au/>

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# Payday Loan Sites' Dirty Tricks To Boost Traffic

**Payday loan brokers have hacked other websites to increase their ranking on Google, Sky News reveals.**

8:37am UK, Sunday 27 January 2013



## Video: Payday Brokers Involved In Hacking

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By Jason Farrell, Sky Correspondent

A Sky News investigation has found that some payday loan brokers have benefitted from hacking into websites to divert the history and status of a legitimate business to their domain.

This increases their ranking on Google, and the tactic has given unregulated brokers access to online traffic worth millions of pounds.

The findings come as the [Office of Fair Trading \(OFT\)](#) prepares its report into dirty tricks in the market, due to be published in February.

Every month, tens of thousands of potential customers use Google to search for payday loans.

The search engine has a complex algorithm based on a website's history and credibility which tries to ensure that users are directed to the most appropriate websites.

However, Google's natural listings system can be tricked. Sky News found three payday websites that were stealing the credibility of other websites to boost their ranking. The target victim sites included a music business, a graduate website and even a church website.

In November last year, Sky News discovered established music licencing website [Ricordi](#) was one of several domains that began ranking highly for selling payday loans on the front pages of Google. Clicking on the link diverted the user to a payday broker's site.





Dr Joseph Somerhalder says brokers have been 'stealing identities'

Web analyst Dr Joseph Somerhalder from search optimisation company [Chillicow](#) explained what was happening.

He told Sky News: "They hack into the website. They optimise the website for something that it is not about such as payday loans. Then they wait for the right moment, and then they forward all the history and all the credibility from the old website, the legitimate business, into the illegitimate business."

He added: "It's a bit like stealing your identity online. They take the website's identity and history and they point it somewhere else."

Ricordi is owned by Universal Music Group. A spokesperson for the company said: "We recently discovered the unauthorised access to our Ricordi UK website. UMG takes the protection of its sites very seriously and has implemented measures to prevent a recurrence of this type of event."

But other companies may not be aware of the hacking. Using web analysis software, we found that over 10,000 websites have been compromised by this technique on one server alone.

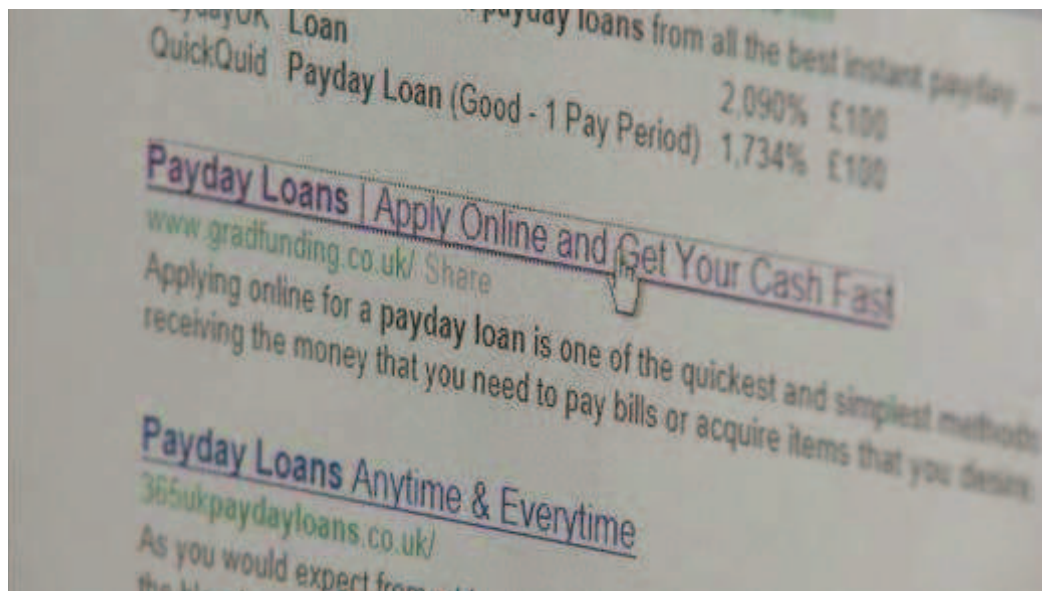
Sky News spoke to the owners of UK graduate website [Gradfunding](#) which was also in the process of being hijacked.

Dr Luke Blaxill, director of the website, said he was also trying to deal with the problem.

"To get rid of this we are going to have to rewrite every bit of code on the website and transfer it to a new server."

The payday loan intrusion meant his company was starting to fall down the listings for its own business operations and it could lose years of building up an online reputation.

Dr Blaxill said: "It has taken years for us to get to the position that we are in this particular market and for that effectively to be almost rewritten overnight by a scammer, is a real problem."



Gradfunding was among the target victim websites

Raihan Islam from [JAR Applications](#), which fixed the problem for Gradfunding, told Sky News: "What they did was inject a malicious code into the web server, and the files trick Google by the method of cloaking.

"They then bomb the site with payday loan links to increase its ranking for payday loans and redirect the traffic to their scam website. That's when the hacker starts making money."

During the investigation we found church website Canada had been hacked for this purpose. We also discovered 21,000 payday loan links had been pointed at a Bonsai society website.

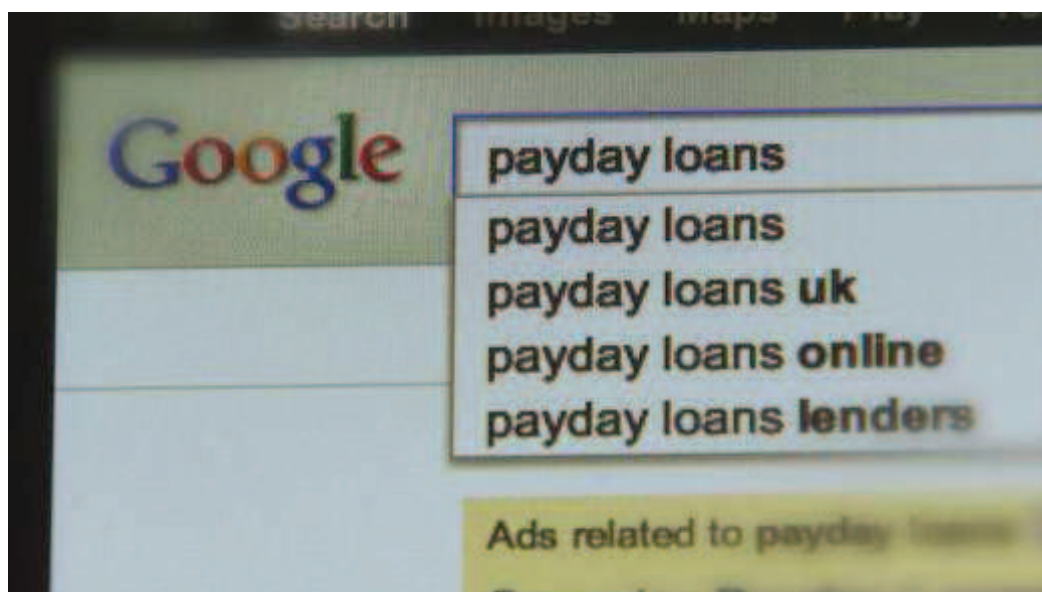
There are concerns these tactics leave UK loan customers exposed to unscrupulous, unregulated brokers.

Over the last two months Sky News conducted test searches on Google for payday loans which produced websites high in the natural listings that were in breach of OFT regulations.

Several had no consumer credit licence, a requirement for any loan broker and lead generator.

Some websites claimed to be 100% secure, but actually had no data protection when customers entered their bank details. This exposes customers to fraud and identity theft.

We also found many websites broke legal requirements on transparency to customers, such as failing to prominently display a representative APR or an address where the company can be contacted.



Sky News found three payday websites involved in dirty tricks

Some legitimate lenders in the industry have told us they are aware of the problem. Many of them advertise on Google's pay per-click service as an alternative to the natural listings.

One lender who did not want to be identified suggested the price of Google's sponsored links have gone up because demand has increased with legitimate companies struggling to get on the natural listings.

"Google could solve this problem by tightening up their algorithm" he suggested. "But they have no incentive to do so. We're all having to use the sponsored listings to get any traffic to our websites."

He added: "But customers don't realise that some companies on the natural listings don't have a consumer credit licence, which means they don't have to tell the customer how much they're going to pay back, which feeds into some of the problems we're seeing at the moment of customers not able to pay back their loans."

Google says its key motivation is to try to direct customers to the best websites.

A spokesman told Sky News: "As part of our on-going effort to reduce webspam and return high-quality websites to our users, we are constantly improving our search algorithm to better detect and decrease rankings for sites that we believe are violating Google's quality guidelines and engaging in webspam tactics to manipulate search engine rankings."

For legal reasons we are not naming the websites linked to hacking but we have passed our evidence to the OFT, which told us: "The OFT is clear regarding the standards it expects from those businesses that it regulates and has publicised an extensive suite of guidance documents. We take very seriously any evidence tending to show that businesses are not meeting the standards set out in our guidance.

"The guidance for credit brokers and intermediaries states that creditors should satisfy themselves that persons they deal with are appropriately licenced. Accepting leads from unlicensed sources would raise concerns about a lender's fitness to hold a consumer credit licence."

At one point during our investigation we found the highest ranking website on Google was a four-day-old domain registered to a field in California.

Just a few days in this position can earn the web owner tens of thousands of pounds. Yet this site was in breach of several regulations and displayed nothing on the website to suggest it was licenced to sell loans in the UK.

Last November, the OFT opened formal investigations into the tactics used by an number of payday lenders. But if the regulator wants to properly police the market, it seems it is going to have to work with Google.

## Recommended Stories

[Former Slaughterman Beheaded Landlord While Still Alive, Court Hears](#) (Sky Tyne and Wear)

[Mexico: Police Hunt For 20 Missing Musicians](#) (Sky News - News)

[Matt Damon's Revenge: Star Crashes Talk Show](#) (Sky News - News)

[Police Officers 'Abuse Positions For Sex'](#) (Sky News - News)

[Man Alarms Qantas Passengers With Awesome 'Princess Bride' T-Shirt](#) (Pedestrian TV)

[The 5 Best Ways to Gangnam](#) (The Daily Muse)

[10 Amazing Pools to Swim in Before You Die](#) (Celebrations)

[Affleck Can Joke but Hollywood's Puzzled by Snubs](#) (The New York Times)

[Texas Fireball, A Sign Of The End Of Days?](#) (redOrbit)

[15 Tips for Talking to Women And Attracting Them Like Crazy](#) (LOL Fanatic!)

[Cooking Up New Ideas: 5 Must-Know Start-ups for Foodies](#) (The Daily Muse)

[Can Earth's Sacred Spaces Heal You?](#) (Akasha Entertainment)

What's this?

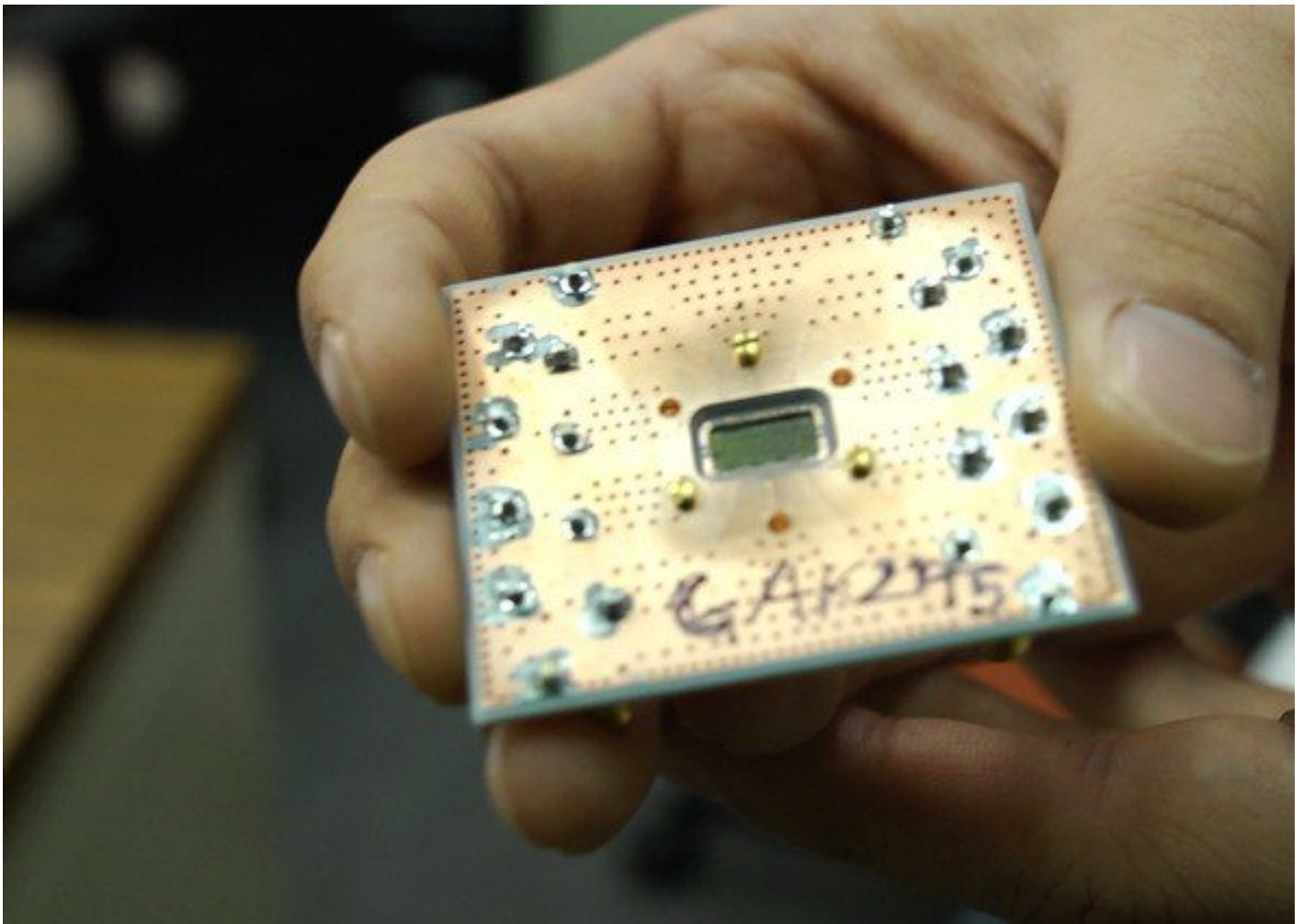
# IBM: We're on the cusp of the Quantum Computing revolution (video)



[Daniel Cooper](#), [@danielwcooper](#)

02.28.12

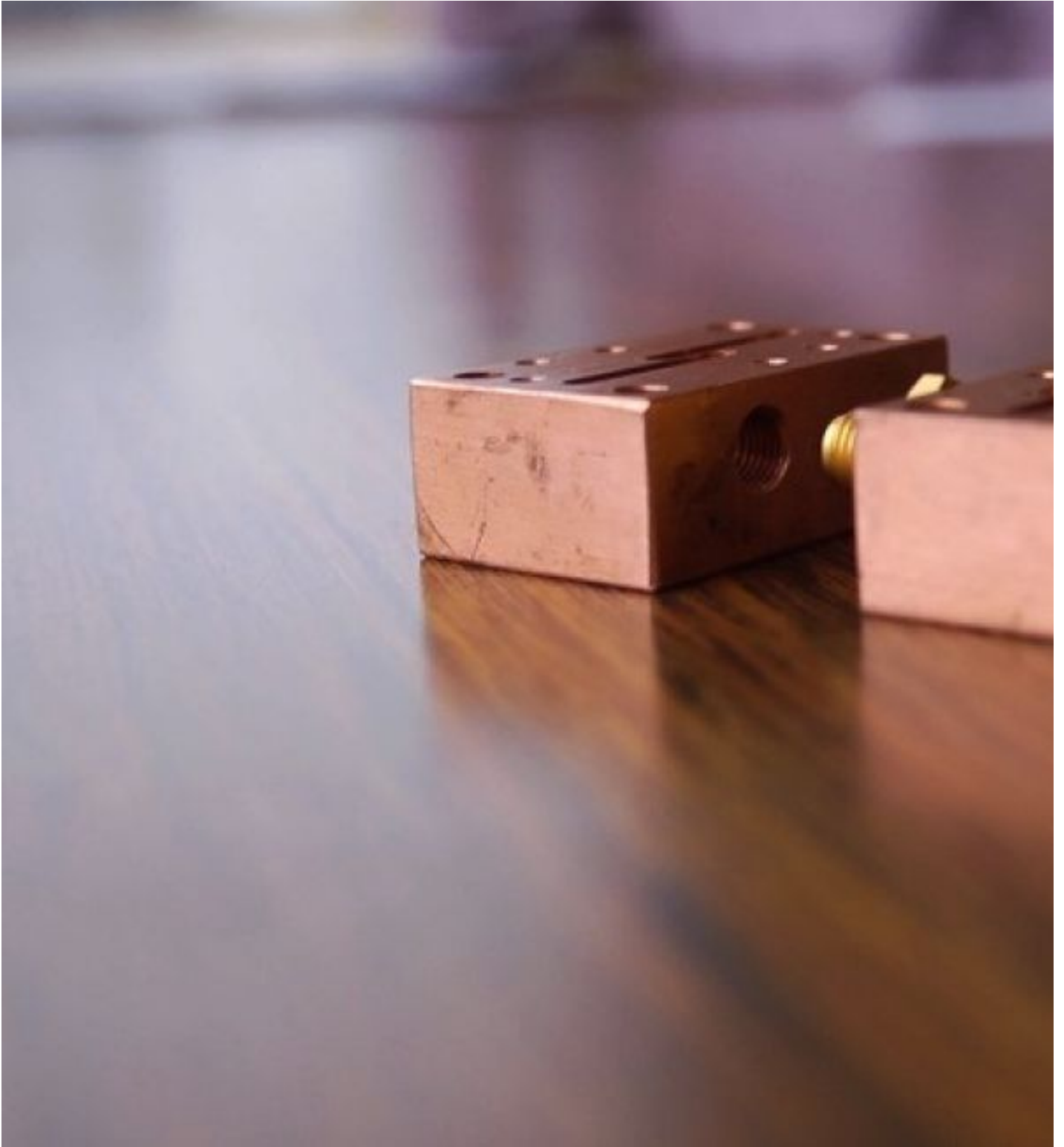
2 Shares

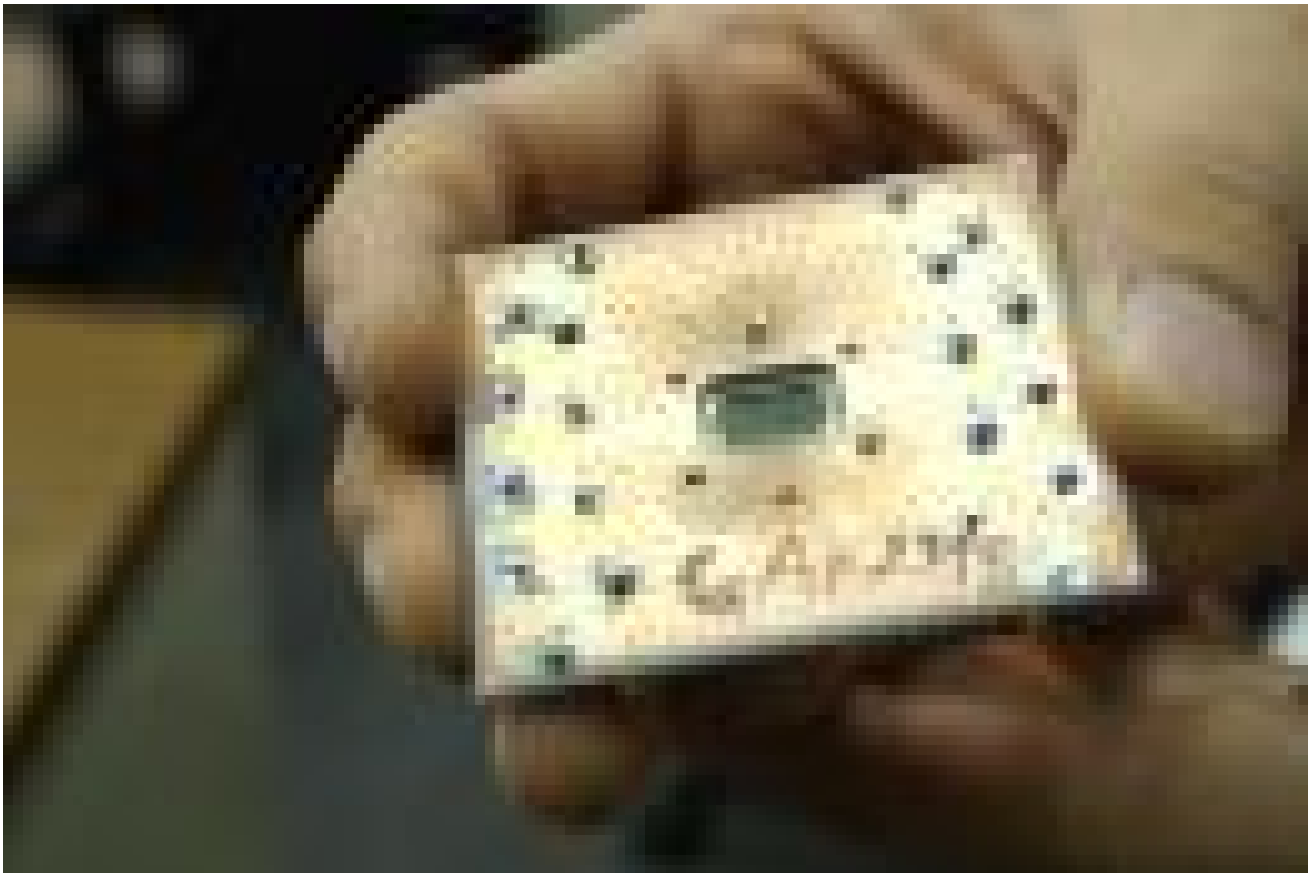
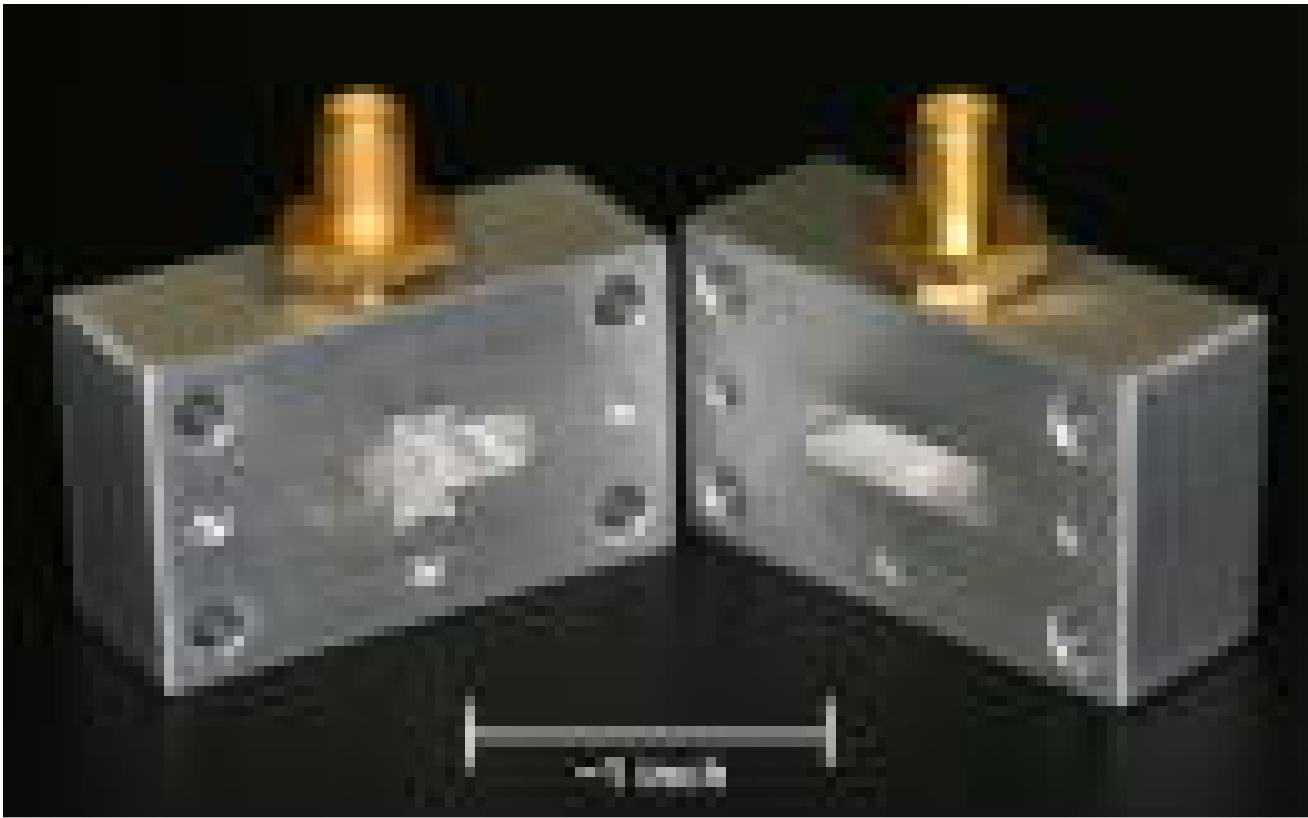


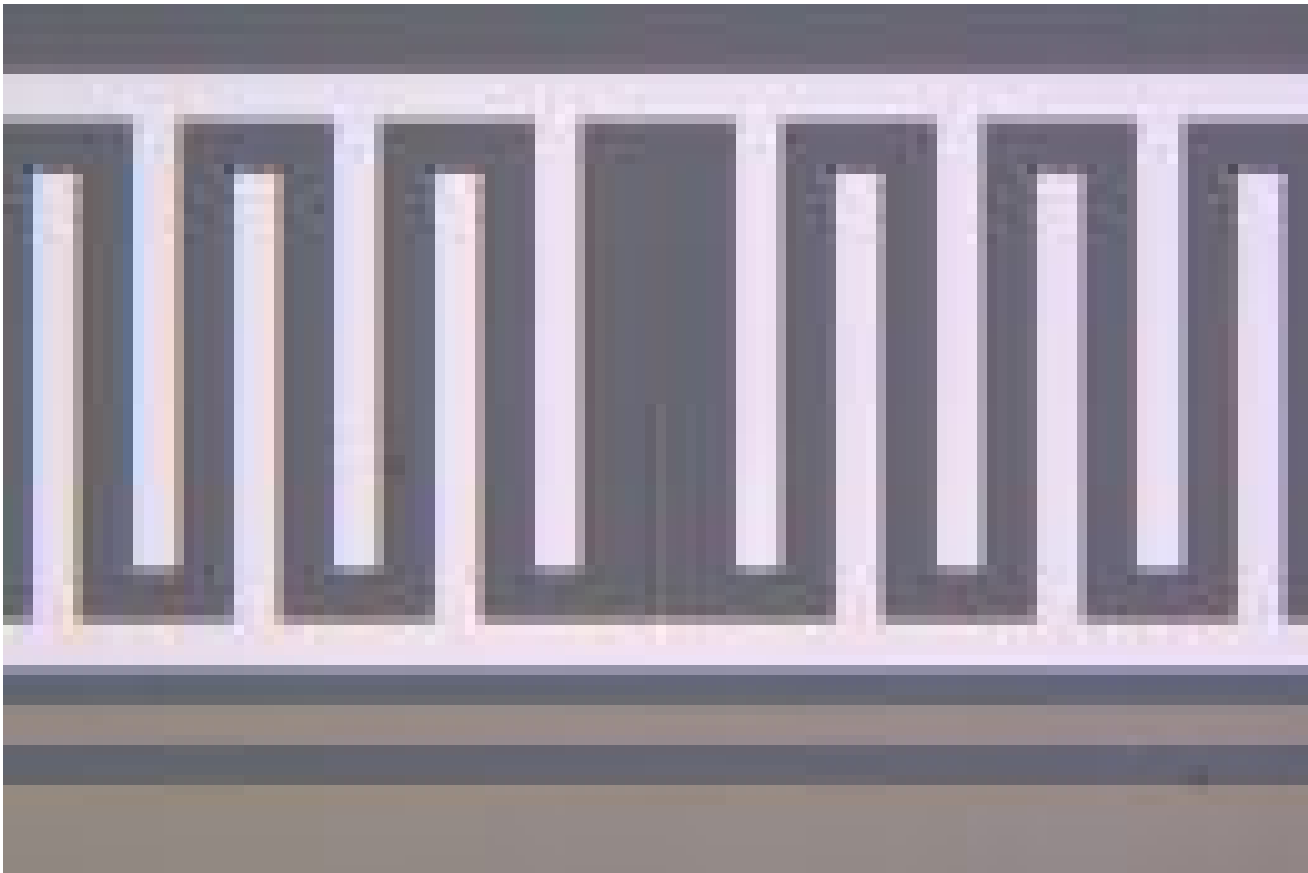
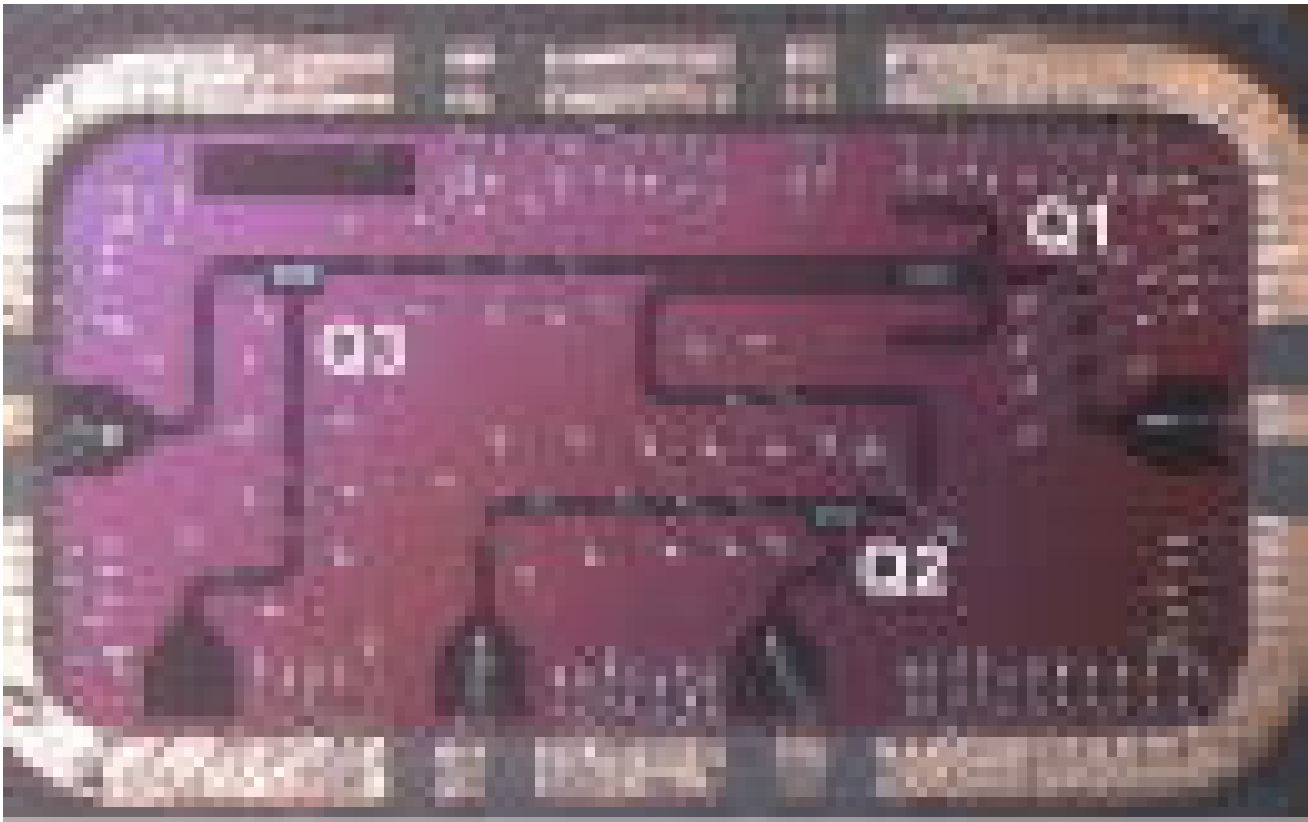
Technology's holy grail is the development of a "perfect" [Quantum Computer](#). Traditional computers recognize information as bits: binary information representing "On" or "Off" states. A quantum computer uses qubits: operating in superposition, a qubit exists in all states simultaneously -- not just "On" or "Off," but every possible state in-between. It would theoretically be able to instantly access every piece of information at the same time, meaning that a 250 qubit computer would contain more data than there are particles in the universe. IBM thinks it's closer than ever to realizing this dream and if you want to know more, we have the full details after the break.



## Gallery: IBM Superconducting QBit Setup | 5 Photos







The system has serious ramifications in the fields of science, technology, medicine and security -- the latter because it can try every conceivable password to access a system within a second. However, for now, this computer remains science fiction rather than science fact. In the same way that you understand the Copenhagen interpretation of Quantum Physics, qubits are negatively affected by both observation and interaction -- the vulnerability of these materials to interference from heat, radiation and defective materials means you can't trust the answers it provides, called quantum decoherence. Being able to produce a qubit of sufficient "integrity" that you can trust the results is what has eluded scientists for decades.

In a few short hours, however, IBM is going to present three brand-new records to the [American Physical Society](#) that could change all of that. Using its R&D know-how, and some of the world's most powerful freezers, it's developed methods of easily building, maintaining and even increasing the integrity of a qubit to the point that it's now very close to the minimum standard required by the research community. David DiVincenzo, professor at the Institute of Quantum Information thinks that the company is "nearly at the tipping point."

Taking technology developed at [Yale](#), its three dimensional superconducting qubit was able to extend the duration of each qubit's quantum state to up to 100 microseconds: a short time for you and me, but a lifetime for a computer that theoretically knows everything. The papers, entitled "*Superconducting qubit in waveguide cavity with coherence time approaching 0.1ms*" and "*Complete universal quantum gate set approaching fault-tolerant thresholds with superconducting qubits*" will be made available after the presentation later this morning and it's hoped that scientists can now concentrate upon error correction schemes to further enhance the technology. Part of the revelation is that IBM built the qubits using traditional commercial chip fabrication technology: meaning that if the final ceiling is breached, it would be possible to mass-produce the technology very rapidly at scale.



## IBM Research Announces New Advances in Quantum Computing



## Matthias Steffen



## Mark Ketchen



## **IBM Research Advances Device Performance for Quantum Computing**

Latest results bring device performance near the minimum requirements for implementation of a practical quantum computer.

Scaling up to hundreds or thousands of quantum bits becomes a possibility.

### **YORKTOWN HEIGHTS, NY – 28 Feb 2012:**

Scientists at IBM Research (NYSE: IBM)/ (#ibmresearch) have achieved major advances in quantum computing device performance that will accelerate the realization of a practical, full-scale quantum computer. For specific applications, quantum computing which leverages the underlying quantum mechanical behavior of matter has the potential to deliver computational power that is unrivaled by any supercomputer today.

Using a variety of techniques in the IBM labs, scientists have established three new records for reducing the error in elementary computations and retaining the integrity of quantum mechanical properties in quantum bits (qubits) – the basic units that carry information within quantum computing. Furthermore, IBM has chosen to employ superconducting qubits which use established microfabrication techniques developed for silicon technology, providing the potential to one day scale up to and manufacture thousands or millions of qubits.

IBM researchers will be presenting their latest results today at the annual American Physical Society meeting taking place February 27-March 1, 2012 in Boston, MA.

### **The Possibilities of Quantum Computing**

The special properties of qubits allow a quantum computer to work on millions of computations at once, while a desktop PC can typically handle minimal computations at a time. For example, a single 250-qubit state contains more bits of information than there are particles in the universe.

These properties will have wide-spread implications foremost for the field of data encryption where quantum computers could factor very large numbers like those used to decode and encode sensitive information.

"The quantum computing work we are doing shows it is no longer just a brute force physics experiment. It's time to start creating systems based on this science that will take computing to a whole new level," says IBM scientist Matthias Steffen, manager of the IBM Research team that's focused on developing quantum computing systems to a point where it can be applied to real-world problems.

Numerous other applications could include searching databases of unstructured information, performing a range of optimization tasks and solving new interesting mathematical problems.

## How Quantum Computing Works

The most basic piece of information that a classical computer understands is a bit. Much like a light that can be switched on or off, a bit can have only one of two values: "1" or "0". For qubits, they can hold a value of "1" or "0" as well as both values at the same time. Described as superposition, this is what allows quantum computers to perform millions of calculations at once.

One of the great challenges for scientists seeking to harness the power of quantum computing is controlling or removing quantum decoherence – the creation of errors in calculations caused by interference from factors such as heat, electromagnetic radiation, and materials defects. To deal with this problem, scientists have been experimenting for years to discover ways of reducing the number of errors and of lengthening the time periods over which the qubits retain their quantum mechanical properties. When this time is sufficiently long, error correction schemes become effective making it possible to perform long and complex calculations.

There are many viable systems that can potentially lead to a functional quantum computer. IBM is focusing on using superconducting qubits that will allow a more facile transition to scale up and manufacturing.

IBM has recently been experimenting with a unique "three dimensional" superconducting qubit (3D qubit), an approach that was initiated at Yale University. Among the results, the IBM team has used a 3D qubit [technical paper available] to extend the amount of time that the qubits retain their quantum states up to 100 microseconds. This value reaches just past the minimum threshold to enable effective error correction schemes and suggests that scientists can begin to focus on broader engineering aspects for scalability.

In separate experiments, the group at IBM also demonstrated a more traditional "two-dimensional" qubit (2D qubit) device and implemented a two-qubit logic operation – a controlled-NOT (CNOT) operation [technical paper available], which is a fundamental building block of a larger quantum computing system. Their operation showed a 95 percent success rate, enabled in part due to the long coherence time of nearly 10 microseconds. These numbers are on the cusp of effective error correction schemes and greatly facilitate future multi-qubit experiments.

## IBM and Quantum Computing Leadership

The implementation of a practical quantum computer poses tremendous scientific and technological challenges, but all results taken together paint a very favorable picture for realizing the first practical quantum computer in the not too distant future.

Core device technology and performance metrics at IBM have undergone a series of amazing advancements by a factor of 100 to 1,000 times since the middle of 2009, culminating in the recent results that are very close to the minimum requirements for a full-scale quantum computing system as determined by the world-wide research community. In these advances, IBM stresses the importance and value of the ongoing exchange of information and learning with the quantum computing research community as well as direct university and industrial collaborations.

"The superconducting qubit research led by the IBM team has been progressing in a much focused way on the road to a reliable, scalable quantum computer. The device performance that they have now reported brings them nearly to the tipping point; we can now see the building blocks that will be used to prove that error correction can be effective, and that reliable logical qubits can be realized," observes David DiVincenzo, professor at the Institute of Quantum Information, Forschungszentrum Juelich.

Based on this progress, optimism about superconducting qubits and the possibilities for a future quantum computer are rapidly growing. While most of the work in the field to date has focused on improvements in device performance, efforts in the community now must now include systems integration aspects, such as assessing the classical information processing demands for error correction, I/O issues, feasibility, and costs with scaling.

IBM envisions a practical quantum computing system as including a classical system intimately connected to the quantum computing hardware. Expertise in communications and packaging technology will be essential at and beyond the level presently practiced in the development of today's most sophisticated digital computers.

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