

# Apple hiring big brains in car battery space

REUTERS, San Francisco

A year and a half ago, Apple Inc had applied for just eight patents related to auto batteries. Recently, it has hired a bevy of engineers, just one of whom had already filed for 17 in his former career, according to a Thomson Reuters analysis.

The recent spate of hires and patent filings reviewed by Reuters shows that Apple is fast building its industrial lithium-ion battery capabilities, adding to evidence the iPhone maker may be developing a car.

Quiet, clean electric cars are viewed in Silicon Valley and elsewhere as a promising technology for the future, but high costs and "range anxiety", the concern that batteries will run out of power and cannot be recharged quickly, remain obstacles. Those challenges could also be seen as opportunities to find solutions to take the technology mainstream.

The number of auto-related patents filed by Apple, Google Inc, Korea's Samsung, electric carmaker Tesla Motors Inc and ride-sharing startup Uber tripled from 2011 to 2014, according to an analysis by Thomson Reuters IP & Science of public patent filings.

Apple has filed far fewer of these patents than rivals, perhaps adding impetus to its recent hiring binge as it seeks to get up to speed in battery technologies and other car-building related expertise.

As of 18 months ago, Apple had filed for 290 such patents. By contrast, Samsung, which has been providing electric vehicle batteries for some years, had close to 900 filings involving auto battery technology alone.

The US government makes patent applications public only after 18 months, so the figures do not reflect any patents filed in 2014.

Earlier this month, battery



REUTERS/FILE

The Apple logo is illuminated in red at the Apple Store on 5th Avenue in the Manhattan borough.

maker A123 Systems sued Apple for poaching five top engineers. A search of LinkedIn profiles indicates Apple has hired at least another seven A123 employees and at least 18 employees from Tesla since 2012.

The former A123 employees have expertise primarily in battery cell design, materials development and manufacturing engineering, according to the LinkedIn profiles and an analysis of patent applications.

A123, which filed for bankruptcy in 2012 but has since reorganized, supplied batteries for Fisker Automotive's now-discontinued hybrid electric car.

"Looking at the people Apple is hiring from A123 and their backgrounds, it is hard not to assume they're working on an electric car," said Tom Gage, Chief Executive of

EV Grid and a long-time expert in batteries and battery technology.

Apple is building its own battery division, according to the A123 lawsuit. Apple did not immediately respond to a request for comment.

The lawsuit reflects how lines between the auto and tech are blurring as Silicon Valley companies from Google to Tesla begin to encroach on Detroit's turf, while automakers develop "connected" vehicles that incorporate the latest applications and Internet services.

So far, sales of pure electric cars in the US and globally are still a tiny slice of a market dominated by internal combustion vehicles. However, Apple and other companies looking to develop electric cars could see opportunity in government mandates and incentives designed to

boost sales of vehicles that do not emit carbon dioxide.

Among those Apple hired from A123 is Mujeeb Ijaz, its former chief technology officer who also worked at Ford Motor Co for 16 years. Ijaz has filed for 17 patents during his career, many in the battery sector, according to the Thomson Reuters IP & Science analysis.

All told, the five engineers from A123 have filed for 23 patents -- some three times what Apple has alone, said Thomson Reuters IP & Science. They generally specialize in battery cell and materials design, and manufacturing engineering.

Ijaz was also sued by A123, which said he breached his agreement with the battery maker by going to Apple and recruiting other A123 engineers.

## US fines Takata for stonewalling airbag probe

AFP, New York

US regulators Friday fined Japanese auto parts manufacturer Takata \$14,000 a day, accusing it of stonewalling the investigation into the company's defective airbags.

Takata failed to fully respond to regulator requests to explain some 2.4 million pages of company documents supplied in the probe, or to provide knowledgeable staff a "walk-through" of the papers, the National Highway Traffic Safety Administration said.

"Takata is neither being forthcoming with the information that it is legally obligated to supply, nor is it being cooperative in aiding NHTSA's ongoing investigation of a potentially serious safety defect," the NHTSA said in a letter to Takata.

About 20 million vehicles produced by some of the world's biggest automakers are being recalled due to the risk their Takata-made airbags could deploy with excessive explosive power, spraying potentially fatal shrapnel into the vehicle. The problem has been linked to at least five deaths globally.

US regulations require Takata to explain documents that are not self-explanatory. Vincent said the company's failure to provide adequate explanations over several months made a February 4 meeting with the company "a waste of agency time and resources."

## Moody's downgrades Russia debt to 'junk' level

AFP, Washington

Moody's cut Russia's debt rating by one notch into 'junk' territory Friday, saying the Ukraine crisis and the fall in oil prices and the ruble will further undermine Russia's economy. Just over one month since its last downgrade of Moscow's credit rating, Moody's said Russia "is expected to experience a deep recession in 2015 and a continued contraction in 2016."

"The decline in confidence is likely to constrain domestic demand and exacerbate the Russian economy's already chronic underinvestment," it warned.

Moody's cut the rating on the country's bonds by one step to Ba1, "speculative" or junk grade. Previously it was Baa3.

The move also came after Standard & Poor's invoked Moscow's ire on January 26 by cutting its rating for the country to junk level.

Moody's said Friday that the government's fiscal strength "will diminish materially" in the face of continuing capital flight, further lowering the country's access to international capital markets.

Moody's also said that, although low for the moment, the risk is rising that the government could respond to international pressure over its role in the Ukraine crisis by deciding to slow payments on its foreign debt.

Moody's also attached to its rating a negative outlook, suggesting the country faces potentially another downgrade in the coming months.

গণপ্রজাতন্ত্রী বাংলাদেশ সরকার			
পরিবেশ ও বন মন্ত্রণালয়			
প্রশাসন শাখা-১			
www.moef.gov.bd			
নং-২২.০৫১.০২৮.০১.০০.০৯.২০১৪-১৯১			
		তারিখঃ ০৭ ফেব্রুয়ারি ১৪২১ বঙ্গাব্দ ১৯ ফেব্রুয়ারি ২০১৫খ্রি	
নিয়োগ বিজ্ঞপ্তি			
পরিবেশ ও বন মন্ত্রণালয়ের নিম্নোক্ত শুন্য পদসমূহ পূর্বের জন্য বাংলাদেশের প্রকৃত নাগরিকদের নিকট হতে (সরকারি বিধি মোতাবেক) প্রত্যেক পদের উপরে উল্লেখিত যোগ্যতা ও অভিজ্ঞতা দ্বারা নির্ধারিত বেতন ক্ষেত্রে দরখাত আহবান করা যাচ্ছে।			
ক্রমিক নং	পদের নাম ও বেতন ক্ষেত্র	পদ সংখ্যা	শিক্ষাগত যোগ্যতা ও অভিজ্ঞতা
১.	কম্পিউটার অপারেটর জাতীয় বেতন ক্ষেত্র, ২০০৯-এর টাঃ ৫৫০০-১২০৯৫/-	১ (এক)টি।	শীর্ষক বিশ্ববিদ্যালয় হইতে মাস্ক বা সমমানের ডিপ্লোমা (বিজ্ঞান বিভাগের প্রার্থীর আবাদিত পাঠেন)। বিভাগীয় ডাটা এন্ট্রি/কেল অপারেটর হিসেবে ০২ বছরের অভিজ্ঞতা থাকলে শিক্ষাগত যোগ্যতা প্রিলিমিনেশন। কম্পিউটার অপারেটর হিসেবে আপ্টিটেস্ট-এ অবশ্যই উল্লেখ হতে হবে।
২.	সাঁচ মুদ্রাকরিক কাম কম্পিউটার অপারেটর জাতীয় বেতন ক্ষেত্র, ২০০৯-এর টাঃ ৫৫০০-১২০৯৫/- (গুরুমাত্র মুক্তিযোক্তা সম্মত/মুক্তিযোক্তা সম্মতের সত্ত্বানগণের জন্য)	১ (এক)টি।	(ক) শীর্ষক বিশ্ববিদ্যালয় হইতে মাস্ক বা সমমানের ডিপ্লোমা। (খ) কম্পিউটার প্রশিক্ষণ প্রাপ্ত। (গ) সাঁচলিপিতে সর্বশেষ গতি প্রতি মিনিটে বাংলা-৪৫ শব্দ, ইংরেজি-৭০ শব্দ থাকতে হবে। (ঘ) কম্পিউটার মুদ্রাকর-এ সর্বশেষ গতি প্রতি মিনিটে বাংলা-২৫ শব্দ, ইংরেজি-৩০ শব্দ থাকতে হবে। (ঙ) কম্পিউটারে Word Processing সহ ই-মেইল ও ফ্যাক্স পরিচালনার দক্ষতা ও অভিজ্ঞতা থাকতে হবে।
৩.	সাঁচ মুদ্রাকরিক কাম কম্পিউটার অপারেটর জাতীয় বেতন ক্ষেত্র, ২০০৯-এর টাঃ ৫৫০০-১২০৯৫/- (সাধারণ)	৬ (ছয়)টি।	(ক) শীর্ষক বিশ্ববিদ্যালয় হইতে মাস্ক বা সমমানের ডিপ্লোমা। (খ) কম্পিউটার প্রশিক্ষণ প্রাপ্ত। (গ) সাঁচলিপিতে সর্বশেষ গতি প্রতি মিনিটে বাংলা-৪৫ শব্দ, ইংরেজি-৭০ শব্দ থাকতে হবে। (ঘ) কম্পিউটার মুদ্রাকর-এ সর্বশেষ গতি প্রতি মিনিটে বাংলা-২৫ শব্দ, ইংরেজি-৩০ শব্দ থাকতে হবে। (ঙ) কম্পিউটারে Word Processing সহ ই-মেইল ও ফ্যাক্স পরিচালনার দক্ষতা ও অভিজ্ঞতা থাকতে হবে।
৪.	অফিস সহকারী কাম কম্পিউটার মুদ্রাকরিক জাতীয় বেতন ক্ষেত্র, ২০০৯-এর টাঃ ৮৭০০-৯৭৪৫/- (গুরুমাত্র মুক্তিযোক্তা সম্মত/মুক্তিযোক্তা সম্মতের সত্ত্বানগণের জন্য)	১ (এক)টি।	(ক) শীর্ষক বেত্তা হইতে উচ্চ মাধ্যমিক সার্টিফিকেট (ইচএসসি) বা সমমানের প্রীকার্য উল্লেখ। (খ) কম্পিউটার প্রশিক্ষণ প্রাপ্ত। (গ) কম্পিউটারে মুদ্রাকর-এ সর্বশেষ গতি প্রতি মিনিটে বাংলা-২০ শব্দ, ইংরেজি-২০ শব্দ থাকতে হবে। (ঘ) কম্পিউটারে Word Processing সহ ই-মেইল ও ফ্যাক্স পরিচালনার দক্ষতা ও অভিজ্ঞতা থাকতে হবে।
৫.	ক্যাশিয়ার জাতীয় বেতন ক্ষেত্র, ২০০৯-এর টাঃ ৫২০০-১১২৫০/-	১ (এক)টি।	কোন অনুমোদিত বিশ্ববিদ্যালয় হইতে বাংলা-বিভাগে কমপক্ষে মাস্ক ডিপ্লোমা।
৬.	সহকারী লাইনেক্স জাতীয় বেতন ক্ষেত্র, ২০০৯-এর টাঃ ৮৭০০-৯৭৪৫/-	১ (এক)টি।	কোন শীর্ষক বিশ্ববিদ্যালয় হইতে গ্রাহক বিজ্ঞানে ইতিমুক্ত স্নাতকোত্তর ডিপ্লোমা। বিভাগীয় প্রেরণ মাস্ক কোর্সে ডিপ্লোমা।
৭.	অফিস সহায়ক (এম.এল.এস.এস.) জাতীয় বেতন ক্ষেত্র, ২০০৯-এর টাঃ ৮১০০-৯৭৪০/- (গুরুমাত্র মুক্তিযোক্তা সম্মত/মুক্তিযোক্তা সম্মতের সত্ত্বানগণের জন্য)	১ (এক)টি।	মাধ্যমিক কুল সার্টিফিকেট (এসএসসি) বা সমমানের প্রীকার্য উল্লেখ।
৮.	অফিস সহায়ক (এম.এল.এস.এস.) জাতীয় বেতন ক্ষেত্র, ২০০৯-এর টাঃ ৮১০০-৯৭৪০/- (সাধারণ)	৭ (সাত)টি।	মাধ্যমিক কুল সার্টিফিকেট (এসএসসি) বা সমমানের প্রীকার্য উল্লেখ।

## Indian IT firms eye robotics, driverless cars for next round of growth

REUTERS, Mumbai

.....  
After decades of low-margin work like server maintenance, India's information technology services firms are moving upscale in search of lucrative contracts for driverless cars and other advanced projects as online innovation changes clients' needs.

Companies from Tata Consultancy Services Ltd to Wipro Ltd are all joining Infosys Ltd in investing in new, high-end technology, industry watchers say. Earlier this week Infosys bought US automation specialist Panaya Inc for \$200 million.

Triggering change is a wave of invention allowing machines to talk to each other online, dubbed 'the Internet of things'. Customers are ramping up: from about 5 percent now, strategy advisor Offshore Insights estimates automation and artificial intelligence work will grow to 25 to 30 percent of an IT outsourcing market seen by the national industry association worth \$300 billion by 2020.

"We're in the midst of a new wave of software, and IT services companies really don't have a choice," said R. Ray Wang, principal analyst and founder of Silicon Valley-based Constellation Research.

As well as deals, the prospect is spurring heavy investment. Third-largest IT services exporter Wipro is building computing systems designed to mimic human decision-

making abilities, where machines can understand and react to what human beings say to them. HCL Technologies, meanwhile, is using robotics to do away with manual testing of hardware. Though carrying higher profit margins, the new business lines are not as big-ticket as traditional large-scale outsourcing projects, meaning revenue may be reduced in the short term, analysts say.

Infosys and peers may also find themselves competing in some cases with global majors such as Google Inc, now developing artificial intelligence business and working on projects including self-driving cars.

But industry watchers see plenty of business openings for players like Tech Mahindra. Its engineers are busy testing consoles for cars that can monitor driver fatigue and predict signs of heart attacks, as well as working on a technology for driverless cars.

"The larger point here is Internet of things," said KS Viswanathan, vice president of industry initiatives at the National Association of Software and Service Companies. "If you look at any automobile today, 25-30 percent of what goes in is electronics."

"Tech Mahindra will take (its technology) to its global clients...A Volkswagen cannot suddenly change all cars to be software-driven like a Google car is, they have to work with what they have and use technology that fits."

## Yahoo woos outside developers in mobile push