



# Technology Brief...

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Research, Analysis, Strategy, Insight

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## Samsung S8 – Some Key Takeaways

Much has been written about the new Samsung Galaxy S8 and S8+. Rather than rehash the technical details and features sets, let's concentrate on those I think are the most compelling.

Samsung needs to recapture momentum after the Notes 7 troubles. S8 is a major opportunity to change the conversation and show consumers who are generally favorably disposed to Samsung that it can still deliver leading edge products people want to go out and buy. It's very likely the S8 will do exactly that. I expect no lingering disenfranchisement for Samsung as most consumers have already forgotten about the battery problems and are looking forward to the new devices.

Displays and their real estate are becoming key competitive differentiators in the smartphone battles. Samsung's Infinity display with invisible home button gives users more screen real estate while keeping overall size of the phone smaller, is a big deal. Big screens have made some phones unwieldy, so this is a nice feature users who want to keep phones in their pockets. And the high resolution OLED screen is just gorgeous. When consumers look at the phones lined up in a row at the retail store, they are often attracted to the best screens. Samsung should do very well in such a head to head comparison.

Usability is both a key feature and one of the most complained about capabilities of today's smartphone, particularly those that run Android. Bixby shows a lot of potential to alter the way users interact with their phones. I don't expect version one to be a blockbuster, but then neither was Siri initially. But Bixby is a journey, and I expect lots of additional features – both from Samsung and partners through APIs – to be added in the coming months and years. If Bixby can live up to its promise of superior usability, it will be a big benefit to Samsung users.

Samsung not only leads in consumer devices, but is the largest supplier of Android phones for business users. I expect the Dex dock and Citrix or VMware VDI capability on the phone to have limited general appeal, but attractive to certain vertical uses. But it shows a commitment by Samsung to be an enterprise player, not just appeal to its consumer roots. DeX allows USB peripherals (like external disk drives) to be attached to the phone. And Samsung's focus on security with Knox puts it at the top of the Android pack for enterprise users (only Samsung and BlackBerry offer truly secure Android devices). I expect 65% of S8 users will use their devices at least part time for business needs, making Samsung a leader in enterprise smartphone devices.

The DeX dock essentially makes the S8 into an Android-book for certain power

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users, letting them hook the phone to a monitor and/or USB connected accessories. I don't expect this to sell in the many millions of units to everyone who buys an S8, especially as it's expensive at \$149. But for certain execs/business types who want to use their phones all day and not have to stare down at a small screen, this might be attractive. The DeX market is somewhat analogous to a laptop docking station, which only sells into about 10%-15% of enterprise/business users. Phone docks have not done well in the past and there is no reason to believe this will be a huge seller either. It's a specialty device and will have some traction, but probably in the same range as the laptop docking sales. Still, that could amount to 5M-10M units. Accessories like this docking station are generally highly profitable for companies compared to the modest margins generated by competitive phone devices, so there is every incentive for vendors to put them out and try to make them successful in the market.

Few buyers are still focused on the past battery problems. But Samsung made a point of saying they have a new process to ensure battery safety. However, unless there is another major battery issue, I don't think consumers care all that much and will just assume everything is OK with the battery until proven otherwise.

Other less compelling (in my estimation) features are the camera, which does a very good job but may not be the primary reason people buy phones, and Samsung Pay and Connect also nice to have but not generally first on the list for people buying a new device (in many cases more like table stakes expectation).

**Bottom Line:** Samsung has recaptured market momentum with its new devices, and barring any major hiccups in the devices themselves, will find them very successful. Indeed, Samsung is ahead of its competitors, and should be able to stay a market leader in the Android ecosystem. And with its focus on enterprise users with Knox and now DeX, I expect Samsung to be the largest enterprise supplier of Android powered phones.

## Dell wants to change endpoint security

Endpoint security is changing dramatically. It's becoming clear that simply doing anti-malware the way it's always been done with an add-on software program that scans for issues through signature comparisons as files are opened is not enough. The two major AV companies, Symantec and McAfee, who championed this approach for many years, now have competition from next generation players like Cylance, who use predictive machine learning and AI approaches to evaluating and discovering new malware not easily detected through signature-only approaches. And processor suppliers like Intel, ARM, Qualcomm, etc. are getting into the act, designing-in trusted segments of their chips intended to become impenetrable vaults for protected execution. With newer sophisticated malware attacks, security must move beyond an outdated add-on only approach and into a multilayered approach that includes hardware, OS and layered software.

The major PC endpoint providers believe that security can be a competitive differentiation. But can they do a better job than just shipping add-on AV software? Enhanced security as a selling point has been tried with marginal success before, but current players may have reached an inflection point. One of the leading examples of this is Dell, which claims to have a superior next generation AV and security solution, and has established a security group chartered to fulfill its vision of what security for new age threats should be.

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Clearly Dell has many assets it can bring to bear, including recently acquired technology from EMC which owned RSA and VMware/AirWatch. But it has also acquired companies over the past few years (e.g., Accrete), and partnered with promising new players (e.g., Cylance). The security business is primarily aligned to its own end points, but Dell will work with other vendor's products. Dell has integrated its offering into a suite with encryption/DRM, host based firewall with protection, and an end point security console that includes VMware/AirWatch, Cylance, RSA NetWitness and SecureID. It also has an API to allow integration with Microsoft's System Center to make it easier for the large number of companies already that management tool.

While aligned to its client business, the group is not constrained to that market. Dell's security group plans to reach out and provide capabilities for a wide range of enterprise needs through its consulting and custom deployment capabilities. While other vendors have similar programs (e.g., HP), they are often limited to their own hardware. And non-hardware companies who provide security services can't match the tight integration with hardware devices that Dell can provide, giving it a competitive advantage.

We believe that Dell has the most wide-ranging security technology capability currently available from a hardware vendor based on the assets it acquired with EMC and the partnerships it has created. Further, the combination of its hardware and software assets creates a synergy that most others can't match. Finally, the ability of the security group to loop back and influence the hardware engineering group makes this a unique relationship among the major vendors.

**Bottom Line:** We believe that Dell's heavy focus on bringing security products and services to their endpoints and business customers makes them a leading contender in this space. It's clear that the old AV software-only approach to enterprise security is no longer sufficient, and that a combined hardware/software approach is required, along with enhanced machine learning and network monitoring capabilities to add the necessary layers to the security perimeter. While all the components are available for the do-it-yourselfer, Dell is leading with a combined product set that will expand over time and that enterprises should evaluate, even if they are not currently a primarily Dell installation.

## ARM's DynamIQ Expansion

ARM has announced a new architecture for its future chips, DynamIQ, with new Cortex designs using DynamIQ coming later this year. It can support up to 8 independent cores of different families (as long as they are compatible with DynamIQ) and is compatible with ARM's big-little architecture. It's targeted at ARM's next step in multi-core design and improved performance, not just at CPU/GPU but also at special processing elements. This is an area where ARM has been less competitive than the higher performance chip producers, so creating this path forward is essential for it to grow into new markets. ARM expects DynamIQ to be a compelling addition that will propel it to higher sales. ARM expects the growth of units to double in the next 5 years to 100B.

In an effort to be more appealing across more markets, ARM knows it must support wider diversity and customization capability with the chip producers who license its designs, even to allowing non-ARM cores into custom chips. DynamIQ is ARM's way to both expand its internal interconnect and core diversity, while at the same time allowing external sources to create their own subsystems for SoC deployments. DynamIQ allows each core with independent granularity of speed,

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- MDM- Where Do We Go From Here?



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power state, on/off, etc. This will be required for ARM's next generation of processors to work properly.

More of ARM's licensees are including application specific subsystems in their designs. Such external subsystems would generally be mission specific accelerators for operations like AI/ML, autonomous driving modules, vision systems, FPLA, etc. Those specialized design components could be offered to the ARM ecosystem and would not be required to license the ARM architecture to do so. By eliminating the licensing agreement, ARM hopes it can greatly expand its licensee's ability to produce more mission specific products than could be done with ARM IP alone. This is becoming mission-critical in many industries as purpose-build accelerators are becoming competitive advantage differentiators.

At a time when ARM architecture is making its way into more markets like cloud servers, networking, end user devices like Chromebooks, etc., it is important that ARM provide a path to be more customized than it has been in the past when most devices deploying ARM where fairly common architecture (e.g., mobile phones), or had simple needs (e.g., appliance controllers). The next 100B chips ARM wishes to power will be much more diverse and need far more processing power.

DynamicIQ extends the ability to pick and choose higher performance ARM Cortex A8 cores that will be announced later this year or early next year that are designed for Dynamic IQ. However it does not include the ability to add low power Cortex M cores or Mali graphics cores, although that capability may come at a later date. The lack of ability to freely choose across all of ARM technology, from low end and low power devices to higher end and graphics cores may be a deterrent to some designs, requiring the use of external bus connections as is the case currently, thus losing the benefits of the DynamicIQ design. But it does include the ability to add custom cores its licensees can design and/or purchase from specialty vendors if they design them to the DynamicIQ interface.

**Bottom Line:** We expect this move by ARM to be received well in the marketplace, and to provide a boost to the kind of customized chips needed for specialty markets that might have gone to competitive architectures – specifically x86. As a result, ARM will be considered in product designs it may not have been considered for previously.

## About J. Gold Associates, LLC.

*J. Gold Associates provides advisory services, syndicated research, strategic consulting and in-context analysis to help its clients make important technology choices and to enable improved product deployment decisions and go to market strategies. We work with our clients to produce successful new product strategies and deployments through workshops and reviews, business and strategic plan coaching and reviews, assistance in product selection and vendor evaluations, needs analysis, competitive analysis, and ongoing expertise transfer.*

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