TRIBUTARY SYSTEMS
DELIVERING A BETTER PERFORMING DATA STORAGE SOLUTION

Shawn Sabanayagam, Chairman & CEO
At Tributary, innovation is the backbone that helps us solve customers’ current and future problems and offer a customer-acknowledged differentiated value proposition in the data protection marketplace.
A n early morning visit to the racetrack in Austin, TX, welcomes spectators with a screen of dust, brakes squealing in protest and the familiar smell of tires burning the asphalt that leaves the senses reeling. While one may expect a professional car racer practicing for his next outing, it is a determined and focused Shawn Sabanayagam, Chairman and CEO of Tributary Systems, practicing on the purpose-built Formula 1 track. While he admits that performance cars are his hobby and high-performance driving allows him to improve his own skills, his focus on performance and achievement directly translates to what Tributary Systems is doing and how he manages the company, and drives its success in today’s marketplace.

Originally from Sri Lanka, Sabanayagam pursued an undergraduate degree in Civil Engineering at the University of Salford in Manchester, England. Immigrating to the United States to continue his education, he earned his MBA with distinction from the University of Michigan's Steven M. Ross School of Business. Knowing that his goal was to “do his own thing,” he first joined Bain & Company, Inc., before founding Trident Partners, LLC, with two others from Bain. And it was there that he connected with Tributary Systems. Following the successful completion of the acquisition of Tributary Systems by Trident Partners, Sabanayagam became the Chairman of the Board. Fostering a culture that is extremely customer-focused, Sabanayagam openly embraces change and disruption as he empowers team members to pursue innovative paths to solve any predicament that they may encounter. Today, Tributary Systems
serves a customer base that consists of numerous Fortune Global 1000 companies from the banking, financial services, retail, telecom, and healthcare verticals.

Founded in 1990, Tributary Systems had a business model that focused on serving the continuous availability or fault-tolerant systems market. Tributary Systems successfully developed, manufactured and deployed the first Tandem compatible tape storage subsystems, much-needed for backup and restore functionality by the Tandem user community. As a result, in 1996 Tributary Systems became an OEM supplier of tape devices to Tandem Computers, a partnership that continues to this day with Hewlett-Packard Enterprise (HPE). Furthermore, working now with HPE and what evolved into the family of NonStop Systems, Tributary Systems expanded its product offering to develop, supply, and support all of the NonStop library management software, together with the actual tape automation - from small cartridge loaders to silos big enough to physically walk into!

Today, the focus of Tributary Systems’ technology and solutions is centered on Storage Director. Early on, Sabanayagam and the Development Team at Tributary Systems realized that future backup/restore requirements for any enterprise would first and foremost be centered on storage systems that could efficiently handle massive amounts of digital data, and of course this assumption proved correct, considering that 90% of all present data was created in the last two years:

• In 2013, IDC estimated that the total amount of digital information created and replicated is 4.4 zettabytes. (one zettabyte is equal to 44 trillion gigabytes!)
• IDC figures at this number will grow to something like 44 zettabytes by 2020, only two years from now.
• And in a similar study commissioned by Seagate, “the global datasphere will grow to 163 zettabytes by 2025”.

On first reading, this shouldn’t surprise any CIO, but what Sabanayagam recognized was that in a world attuned today to software-defined everything, working towards supporting massive amounts of data Tributary Systems had to embrace software-defined principles long before others considered such an option. When it comes to describing Storage Director, it is:

• A patented, software-defined, high-performance storage solution that virtualizes and consolidates data backup through a scalable, policy-based and tiered architecture.
• A software-defined, policy-based and tiered enterprise backup virtualization solution that enables data from any host, OS or backup application, to be backed up to any storage device, media or technology, including IBM’s Cloud Object Storage (COS) platform, Hitachi Content Platform (HCP) or any AWS S3 compatible cloud.  
• A fully virtualized target for any backup application such as Spectrum Protect, NetBackup, Commvault, Veeam, etc. which also enables policy-based data pools to be created and backed up to multiple targets and replicated for remote storage and DR.  
• A unique offering in being able to present a single backup target or solution for backing up all open environments, such as Linux, Windows, VMWare, UNIX, etc. as well as all proprietary host platforms, such as IBM Mainframe (z/OS), iSeries, HPE NonStop, HP Open VMS etc. on a single node.  
• An optimized back-end S3 interface to allow customers to stream their data post backup process to IBM’s Cloud Object Storage (Cleversafe) enterprise backup and archive platform or any S3 public cloud target. Tributary developed a unique methodology to vault data to an object storage target that includes aggregating data to varying size data blocks and tunable network metrics to achieve high performance.  

When a competitive car is taken to the track for a weekend of high-performance driving, it’s important to consider the design center of the vehicle being driven. Per Sabanayagam, “not every car is designed to be competitive under the stressful conditions encountered on track.” Looking at Storage Director in more detail and at its enhanced feature set, it is clear that it has been designed to not only be competitive but also be a complete solution for all enterprises:  
• Allows users to fully virtualize and automate backup and restore operations  
• Lights-out operation allows remote administration  
• Front-end and back-end processing are separated  
• Industry-leading performance from InfiniCache™ proprietary cache striping technology on disk or flash eliminates problems meeting customer specified backup windows  
• Allows users to define policies that allow flexible data storage and migration strategies  
• Storage Director can perform real-time backups while concurrently migrating older data from legacy tape or proprietary dedup storage to IBM Cloud Object Storage or Hitachi Content Platform object storage solutions  
• Storage Director will consolidate all user storage subsystems for simplified backup/restore operations  

• It is expandable and scalable for capacity and performance  
• It is simple to use, incorporating an industry leading GUI used for system configuration, administration and daily operations  
• Can be deployed in heterogeneous multi-platform environments  

“We are the turbochargers for cloud-based object storage solutions. When IBM’s Cloud Object Storage is implemented on premise with Storage Director, the backup and restore performance is significantly faster with the same or similar hardware,” states Sabanayagam. “Think of it as an 18-wheeler semi-truck with the performance of a Lamborghini! Both IBM and Tributary are positive that this combined solution will revolutionize on-premise data backup and archive for enterprise customers.”

• Platforms include Windows, Linux, UNIX (AIX, HPUX, Solaris), IBM iSeries (AS/400), HPE NonStop (Tandem), HPE VMS, VMware® and more  
• Supports all major backup management applications such as Spectrum Protect/TSM, NetBackup®, Veeam, Commvault Simpana®, BRMS (iSeries) and ABS/MDMS (OpenVMS) and others  
• It is transparent to users and applications  
• Can be installed on non-proprietary, less expensive, hardware  

Storage Director is more secure when compared to competing backup/restore solutions. It incorporates AES256 encryption and fully supports Information Dispersal Algorithm (IDA) or Erasure Coding from IBM and Hitachi. Additionally, Tributary leverages the security features provided by public cloud vendors such as AWS, Google and Azure. Partnerships in a changing technology world remain foremost in the mind of
With the rise of cloud, mobility, IoT, social and analytics, the data explosion is accelerating.

New, mostly unstructured data sources emerge constantly, creating an expanding data ecosystem for every organization.

- 75 billion Internet-connected devices by 2020
- 90% of all data was created in the last 2 years

80% Unstructured Data

### Tributary Systems’ Sabanayagam.

Today, Tributary Systems premier product, Storage Director, is the fastest, lowest-cost enterprise backup storage solution on the market, according to Sabanayagam. The company’s development pace is accelerating its roadmap deliverables as the teams focus on additional connectivity and performance enhancements to Storage Director. The connectivity advantage that Storage Director has today over all other backup targets also allows customers to reduce the total number of backup solutions. With a 30 percent YoY growth, Tributary Systems holds a strong position today and aims to increase its lead in the near future.

As previously mentioned, 90 percent of all data in existence in the world was generated in the last 24 months, and 80 percent of all new data being generated is unstructured. Although not the same across all sectors and verticals, these statistics do point to an exponential growth in data, particularly unstructured data. It would be hard to ignore the metaphors here as turbocharging has become the dominant technology embraced by all manufacturers of competitive vehicles, and when it comes to optimizing performance, it tells its own story – something Sabanayagam is only too happy to discuss with any party interested in optimizing performance.

Object storage, whether it is on-premise solutions, like IBM Cloud Object Storage or Hitachi Content Platform or public clouds like AWS, Azure, Google and IBM Cloud, will offer the lowest cost, most scalable, and most secure backup storage options. “Tributary is well positioned to leverage the growth of unstructured data in the marketplace to offer object storage, whether it is on-premise or in a public cloud. And to offer backup/restore and archive solutions at the lowest cost, with the highest performance, scalability and security” concludes Sabanayagam. And with that, the business that so engages Sabanayagam beckons and there are more enterprises that need Storage Director!

In case you missed it, HPE is delivering on its promise of “The Machine” and with Superdome Flex, Tributary Systems is equally as intrigued as are HPE customers about how best to address backing up the huge memory configurations already shipping. In case the value proposition escapes CIOs looking at Tributary Systems, according to CEO, Sabanayagam, you “really need to understand the lengths we have gone to when it comes to addressing the performance needs of large customers, the demands of the enterprise and the expectations of our partners. Yes, it’s exciting but equally as important, we have assembled a team unlike any other that simply embraces the world of object storage!”

Fortunately, just as he does in a high-performance car, Sabanayagam isn’t lifting. He isn’t taking his foot off the accelerator and there’s even more to come from Tributary Systems. On the public cloud connectivity side, Tributary Systems natively interfaces AWS, Google, IBM Cloud, etc. with all enterprise systems on premise by developing a high performance data ingestion engine that converts block storage to object storage. The same engine allows customers to use on-premise object storage platforms, like IBM Cloud Object Storage and Hitachi Content Platform with high performance which allows both of these platforms to be used as active backup solutions as well as an archive tier. And yes, in the near future, backup even the massive Memory-Driven Compute products coming from HPE.

Most on-premise data backup solutions in use today at large enterprise customers are single tier (dedup disk, tape, NAS etc.), one-size-fits-all solutions that are highly inefficient; we allow customers to purchase software licenses for Storage Director and deploy them on existing or customer-sourced industry standard hardware including VMware.

Tributary Systems’ Sabanayagam. Today, its partnerships with the biggest vendors in the marketplace will propel Tributary Systems deeper into the mainstream of solutions providers. Due to Storage Director’s front-end connectivity and extreme data ingestion and data vaulting performance capabilities, IBM and Tributary Systems have partnered to offer a combined, highly available, software-defined, policy-based, and tiered-backup storage and archive solution centered on IBM’s Cloud Object Storage. Tributary is partnered with IBM, HPE, Hitachi as well as Amazon Web Services (AWS). Exciting? There is more to come according to Sabanayagam.

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