SAP Then and Now – and the Future of Cloud ERP

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As originally published in the Credit Research Foundation 2Q 2019 Credit & Financial Management Review

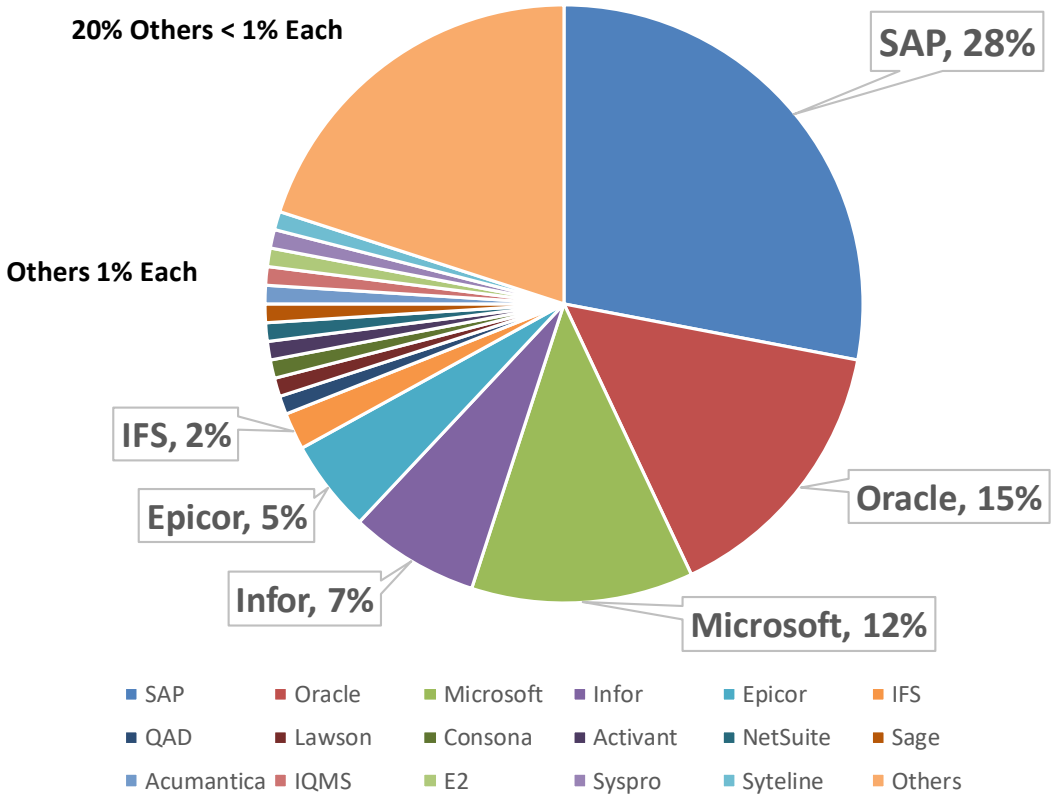
Abstract

No matter how advanced ERPs and Cloud Computing become, these systems and processes will always rely on complete, accurate, clean and up-to-date customer and transactional data. This is the great equalizer and an area where SAP, Oracle, Microsoft and all others will continue to struggle.

In 1972, non-mainframe Enterprise Requirements Planning (ERP) systems were born.

Five Engineers (*Hasso Plattner [current SAP CEO], Dietmar Hopp, Klaus Tschira, , Hans-Werner Hector, and Claus Wellenreuther*) working for IBM in Germany left to start a new company with a very different approach to enterprise computing. They called their company "System Analysis and Program Development" – SAP.

Another big milestone you might remember from 1972: the arcade game "PONG" was released – a very significant birth of a completely different kind of human activity – particularly for our children.



Today, 47 years and 413,000+ customers later, SAP dominates the global Enterprise Requirements Planning (ERP) landscape (*Data from CRF/Cforia Webinar "Rewind to the 70's when mainframes ruled and the Rolling Stones Rocked" - https://go.cforia.com/cforia-crf-SAP-progress-on-demand-webinar*)

Most CRF Member companies today are either using SAP or are being affected by one of their customers who is using SAP in some part of their business operation.

Back in 1973 the first SAP product released was called SAP R/1 (*many companies around the world are still running R/1 today – which is fine, especially if you really like green-screens*). R/1 was a tremendous breakthrough for non-mainframe Payroll and Accounting software. The main advantages were two-fold:

1) SAP R/1 did not require COBOL Punch-Cards, which was the norm at the time. This was a big deal and thus the "R" for 'Real-Time' computing was evolving.

2) SAP created a new 'Logical Database' from which to access and process SAP data elements. This was another big deal at the time and recently the new SAP In-Memory HANA RDBMS (Relational Database Management System) has taken another major leap forward in ERP processing speed and data processing power.

> "***The S/4HANA finance application, can drink data more than 10-fold."*** Hasso Plattner, SAP Chairman/Founder

Keep in mind, the 1972 SAP R/1 system ran on IBM computers using a DOS (Disk Operating System) with a whopping 8KB (8,000 Bytes) of Random Access Memory (RAM). The average Smart Phone we carry today runs on 6GB (6,144,000,000 Bytes) of RAM, and many cell phones have 12GB of RAM.

In 1973 SAP released R/98, the 'first commercial ERP system' on the market, which featured centralized data storage with common systems and process capability. This was followed in 1979 by SAP's R/2, which had expanded capability for inventory, supply chain management and manufacturing. In 1992 SAP R/3 was delivered and went through six releases ending in 2003 with R/3 Enterprise release 4.70.

If we took a CRF survey today, we would find a surprising number of companies still running on this fifteen year-old SAP software version…*but you are not alone - there are still a lot of old IBM AS400 computers out there running custom legacy RPG software.*

In 2004 SAP ECC 5.0 (SAP ERP Central Component Release 5) hit the market and was called '*mySAP ERP 2004'*. The combined releases of SAP's ECC are SAP's biggest revenue generators and have been for some time. These software releases delivered enhanced modules for Financials (FI), Material Management (MM), Human Capital Management (HCM) and several other enterprise department offerings through SAP acquisition and internal development.

From 2005 to 2009 SAP ECC6 (mySAP ERP 2005), SAP further enhanced their ERP offerings with the introduction of SAP Financial Supply Chain Management (FSCM), which included:

- SAP Treasury and Risk Management (FIN-FSCM-TRM)
- SAP Biller Direct (FIN-FSCM-BD) (*Sunsetted product*)
- SAP In-House Cash (FIN-FSCM-IHC)
- SAP Cash and Liquidity Management (FIN-FSCM-CLM)
- SAP Collections Management (FIN-FSCM-COL)
- SAP Credit Management (FIN-FSCM-CR)
- SAP Dispute Management (FIN-FSCM-DM)

While all this SAP global Enterprise Requirements Planning (ERP) evolution was taking place, other technology companies were jumping into the fray and creating a vibrant and competitive ERP marketplace, which is estimated by Allied Market Research to be worth almost $42B by the end of next year: *"ERP Software Market Report, published by Allied Market Research, forecasts that the global market is expected to garner $41.69 billion by 2020, registering a CAGR of 7.2% during the period 2014-2020."*

Not one to be left out of the party, Larry Ellison co-founded the Oracle Corporation in 1977 and today Oracle has a Market Cap over $180 billion. Oracle delivered the first commercial SQL RDBMS (Structured Query Language Relational Database Management System). 'SQL' meant that you could reach many data records with a single program command, plus you did not have to programmatically specify how the system was going to access that desired data element, which saved lots of coding. This was a huge improvement for software developers.

Yes, today Oracle will tell you that their latest offering 'Oracle NoSQL' (*or 'Not Only SQL' as it actually can use both*) is vastly superior to SAP's new HANA RDBMS, particularly for "Big Data" applications. But SAP will tell you that SAP HANA (*High-performance Analytic Appliance*) is vastly superior to Oracle's NoSQL for Cloud-Based Software-as-a-Service (SaaS).

The truth is, Oracle and SAP's new offerings are both exciting technological advancements and will both drive many new things…including A LOT OF MONEY for not only Oracle and SAP, but all the System Integrators (SI's) and Consulting Firms who satellite global enterprise software providers.

It is true that almost every software solution appears to be moving to the Cloud (*Software-as-a-Service provided over the Internet*), as every major player in the ERP space has Cloud offerings today and these offerings are only growing/moving faster to SaaS for many beneficial financial, operations and technological reasons.

Let's not forget the other major and growing force in the ERP space. . . Microsoft.

In 1975 Bill Gates and Paul Allen founded Microsoft in Albuquerque, New Mexico. Today Microsoft has a Market Cap in excess of $970 billion. Although Microsoft still lags behind SAP

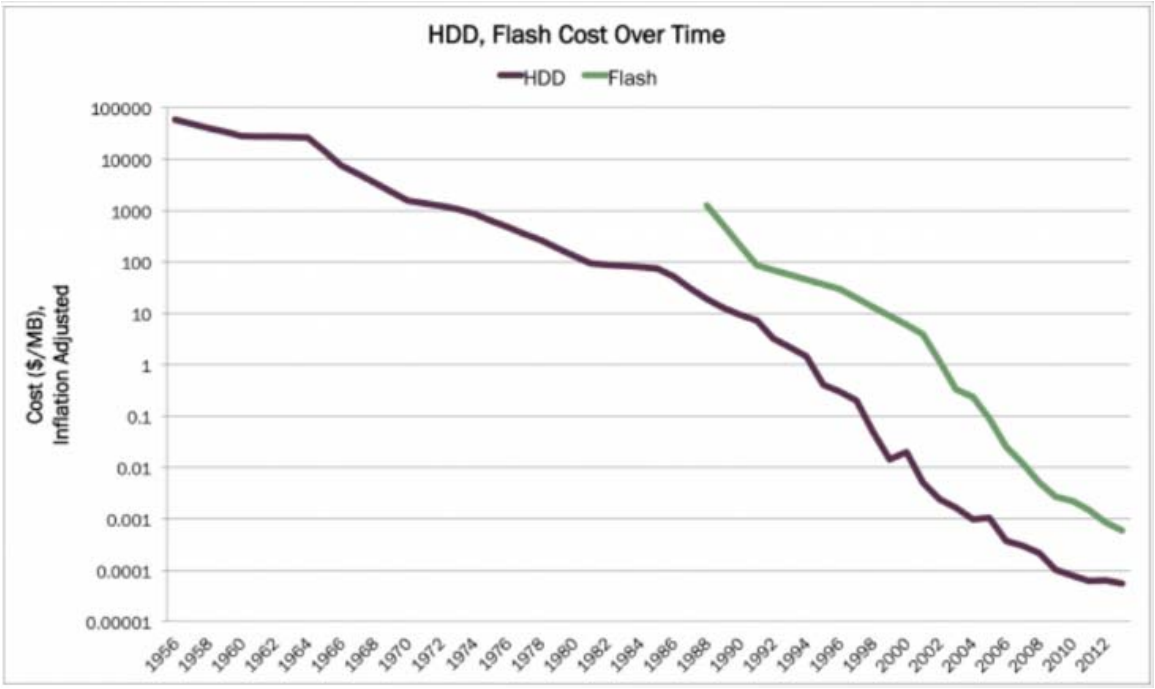
and Oracle in ERP Marketshare, a trillion dollars can buy a lot of market penetration, which is exactly what Microsoft did and is continuing to do.

Microsoft's ERP offerings come in five flavors:

1. **Microsoft Dynamics AX -** Large enterprise ERP. Microsoft acquired NavisionDamgaard for $1.45B in 2002, then put in a lot of R&D and released Microsoft AX2012 in 2011 to directly compete with SAP and Oracle
2. **Microsoft Dynamics GP -** Mid-Market ERP. Microsoft purchased Great Plains (GP) in 2001 for $1.1B for this ERP offering
3. **Microsoft Dynamics NAV** - Navision was a leading mid-market ERP in Europe. Microsoft bought both the foundational software for AX and NAV with the same NavisionDamgaard purchase
4. **Microsoft Dynamics SL** - Construction and Contracting industry software
5. **Microsoft Dynamics C5** - Both SL and C5 are primarily small company specialized ERP products designed to compete with other similar market offerings like QuickBooks.

At the same time all these ERP software evolutions were happening, there was a sea change taking place with respect to computer technology, specifically the systems that ran these ERPs, or rather the 'cost of computing' as it related to the machines needed for the ERPs.

There was a great article published by Chris Burniske, ARK Analyst, in 2014 titled: "*The Evolution of Storage: From Hard Disk Drives to Resistive RAM*" which includes this graphic. It tracks the inflation adjusted cost per Megabyte ($/MB) from 1956 to 2012.



A ‘fast’ HDD (Hard Disk Drive) can read and write sequential data (*non-random*) at about 125MBps (Megabytes per second). SSD (Solid-State Disk with no spinning disk) reads and writes at speeds roughly 425% faster. *So, if your Credit and Collections team is still processing data on spinning disks, get IT to give your team a cost-effective boost in performance by switching to SSD.*

There was also a new storage medium created called Flash Memory (FLASH) coming onto the scene. FLASH is a specialized SSD, or a non-volatile (reliable) computer storage medium. Toshiba developed the first FLASH in the early 1980s and called it EEPROM (*Electrically Erasable Programmable Read-Only Memory*) and released it in 1984.

So, during all this ERP software revolution taking place, the demand for bigger and faster data handling capability…the actual costs of computing power in terms of $/MB of storage was dramatically falling. In the chart above, Chris Burniske tracks the costs going from $1,000.00 per Megabyte in 1972 when SAP got started, to under $0.0001 per Megabyte by 2012.

These technology advancements and the associated cost reductions were huge enablers of software solutions being available (*and enterprises deciding to go*) onto Cloud offerings in the form of Software-as-a-Service (SaaS). In addition to the highly-secure, specialized and performance increasing offerings, the primary benefit is the cost savings of a company not having to buy all the hardware and maintain large datacenters and IT staffs to keep all these mission-critical systems running 7/24/365 and safe from intrusion.

You may have heard of Platform-as-a-Service (PaaS) with offerings like Oracle Cloud, Amazon Web Services (AWS), Google Cloud Services Platform, Microsoft Azure and Salesforce. The Gartner Group projects this market reaching in excess of $400 billion by 2020. The information platforms used typically operate in High-Capacity Infinitely-Scalable, SSAE16 SOC1-SOC3 secured and certified Co-Location Data Facilities. These information infrastructure co-locations (*Co-Los),* use very specialized Virtual-Servers running High-Availability, Redundant Fail-Over, Fault-Tolerant, Secured and Certified systems.

Sorry, I love technology and these data-points do help give perspective to all the changes you have been hearing about within the software industry. Plus, all these changes directly affect your job and the information tools your order-to-cash teams use to manage your Book-of-Business…*which is typically the #1 or #2 Working Capital Current Asset on your company’s Balance Sheet.*

All this technology advancement is a critical requirement and central dynamic that is literally enabling the next evolution of SAP’s ERP software to the new In-Memory HANA (High-performance Analytic Appliance) Relational Database. To give you an idea of what that means, 26 separate SAP ECC6 data tables will be consolidated to just one master S/4HANA (S4H) data table and SAP is estimating up to 30 times the data processing speed.

Remember the SAP CEO quote above: "The S/4HANA finance application, can drink data more than 10-fold." That translates into the new SAP 'In-Memory' solution running ten-times the speed and increased power to handle an ever-increasing amount of enterprise data. In fact, SAP is betting its future on it...as they are ending support for all predecessor SAP ERP software releases in 2025, which is not that far away, especially considering the time it took to get your current software to work properly for your enterprise.

So, what does the future hold for SAP and ERP systems in general?

There is a great paper written by John Erik Ellingsen, the Managing Director of the SAP Business Group for Accenture, titled: "*Unleashing Exponential Evolution – 2019 ERP Trends*".

In the introduction titled "*How to unleash the potential of your digital initiatives with intelligent ERP*", Ellingsen points out that CIOs will be focused on their ability to "*empower their organization to be future-aligned and core-nimble to chase business ambitions."* In other words, don't let IT stand in the way of business progress. That sounds great!

In a recent Accenture survey, they found that more than 50% of CIO's said they preferred Private Cloud and this is consistent with Forrester research "CIOs and the Future of IT".

In Ellingsen's paper he identifies these five (5) trends which he considers "fundamentally important."

> "**TREAT CLOUD AS THE GATEWAY TO MODERNIZATION**: Develop a nuanced cloud strategy that suits your business ambitions. Engineer cloud as part of a larger strategy around digital transformation, cost savings and new business models.
>
> **MAKE YOUR CORE INTELLIGENT AND EXTENDED**: Invest in intelligence and automation – powered by AI, machine-learning, and analytics: not as an add-on but as a core part of your ERP platform. Enable your business to extend at scale and in real-time.
>
> **PARTNER WITH CLOUD CAPTAINS, NOT TRADITIONAL SERVICES FIRMS**: Find co-creation partners that differentiate by reimagining services delivery models, being technology agnostic, and specializing in your business.
>
> **PERSONALIZE**: Make user experience (UX) seamless across channels and platforms and personalize relentlessly.
>
> **AMPLIFY INSIGHTS BY CONVERGING DATA**: Treat data as an asset. Free up the data in your ERP systems and converge different data sources for deeper intelligence."

The way I interpret these solid Accenture insights is:

1. Cloud Computing is here, every major ERP offering has it and this software trend is only accelerating. If over 50% of CIOs already prefer Private Cloud Computing, see if you can capitalize and take advantage of available modernizing technology to help you and your staff improve order-to-cash procedures, processes and results. *Cash is King* and your department controls the #1 or #2 Current Assets on your company's Balance Sheet.

2. OK, it is only natural that the lead SAP ERP guy at Accenture would determine that 'core ERP' is the way to go. Most Consulting companies and big System Integrators will also. As an "add-on" or "bolt-on" provider, focused on one critical working capital element, point-products for Credit, Collections, Disputes and Cash Application offer a great deal of advantage over ERPs. Let's chat.

3. Completely agree. Find order-to-cash specialists who offer tools that work with your current environment. Being agnostic to ERP, Billing System, System of Record, System of Engagement, Imaging System, etc. This offers you a tremendous amount of flexibility and faster time-to-value to help prove your ROI (return on investment) to your management.

4. Whatever you do to modernize, it has to be easy to use and easy to customize (configure) so that it gets adopted and becomes second nature. This is especially true for software. If your team or our customers find the technology experience complicated rather than intuitive, you will miss the mark of getting the results that you want.

5. 100% correct - "Treat Data as an Asset." The accuracy of your Customer Intelligence (*everything related to Customer Master Data*) will make or break your order-to-cash outcomes.

    a. If your Customers do not trust the data they see in your Customer Self Service Portal, or it is not a complete picture of the business they do with your global company, the portal will fail.
    b. If your Collectors do not trust the accuracy and timeliness of the data, they will waste a great deal of time self-gathering the data they need.
    c. If you want to use Artificial Intelligence, Learning Algorithms and Robotic Process Automation to propel your team to great capacity and accuracy, the 'Data' has to be complete, timely and it has to be clean.

Charles Babbage (1791-1871) was a mathematician, mechanical engineer and inventor who originated the concept of a digital programmable computer. In his writing he relates being asked:

"Pray, Mr. Babbage, if you put into the machine wrong figures, will the right answers come out?"

Although this exchange occurred some hundred and sixty years ago, it is an extremely poignant commentary on the prowess of today's latest FinTech (*Financial Technology*) - particularly when it comes to Artificial Intelligence (AI), Learning Algorithms and Robotic Process Automation (RPA).

At some point in the 20th century the phrase GIGO (Garbage In, Garbage Out) was coined and it keeps coming up every day in our order-to-cash business lives.

If you do not have a complete Customer Master Record (*Customer Intelligence*) across all your Global Business Units and Systems of Record (*ERPs*), with an accurate Parent/Child Hierarchy rolling-up your Global Exposure, calculated with Clean-Receivables (*without Disputes, Deductions, Authorized Returns, Credits, Trade Funds Co-Op, Payment Promises, etc.*), your AI, Algorithms and Workflow will fail and cause you countless hours of rework to correct the errors.

No matter how advanced ERPs and Cloud Computing becomes, these systems and processes will always rely on complete, accurate, clean and up-to-date customer and transactional data. This is the great equalizer and an area where SAP, Oracle, Microsoft and all others will continue to struggle.

Chris Caparon is the CEO of Cforia Software and has over 20 years of enterprise software experience. Chris is a frequent industry speaker for CRF, ICTF and the Hackett Group, on the subjects of improving working capital outcomes in Credit, Collections, Disputes, Cash Application and OTC Workflow Automation. Chris Caparon has led the implementations of over 200 Order-to-Cash (OTC) Improvement Projects globally, integrating real-time data across multiple billing systems to create a single productivity platform for improving the focus and effectivity of regional and global financial shared service operations and personnel.

Chris has double engineering degrees from the University of Michigan in both Electrical Engineering and Computer Engineering.