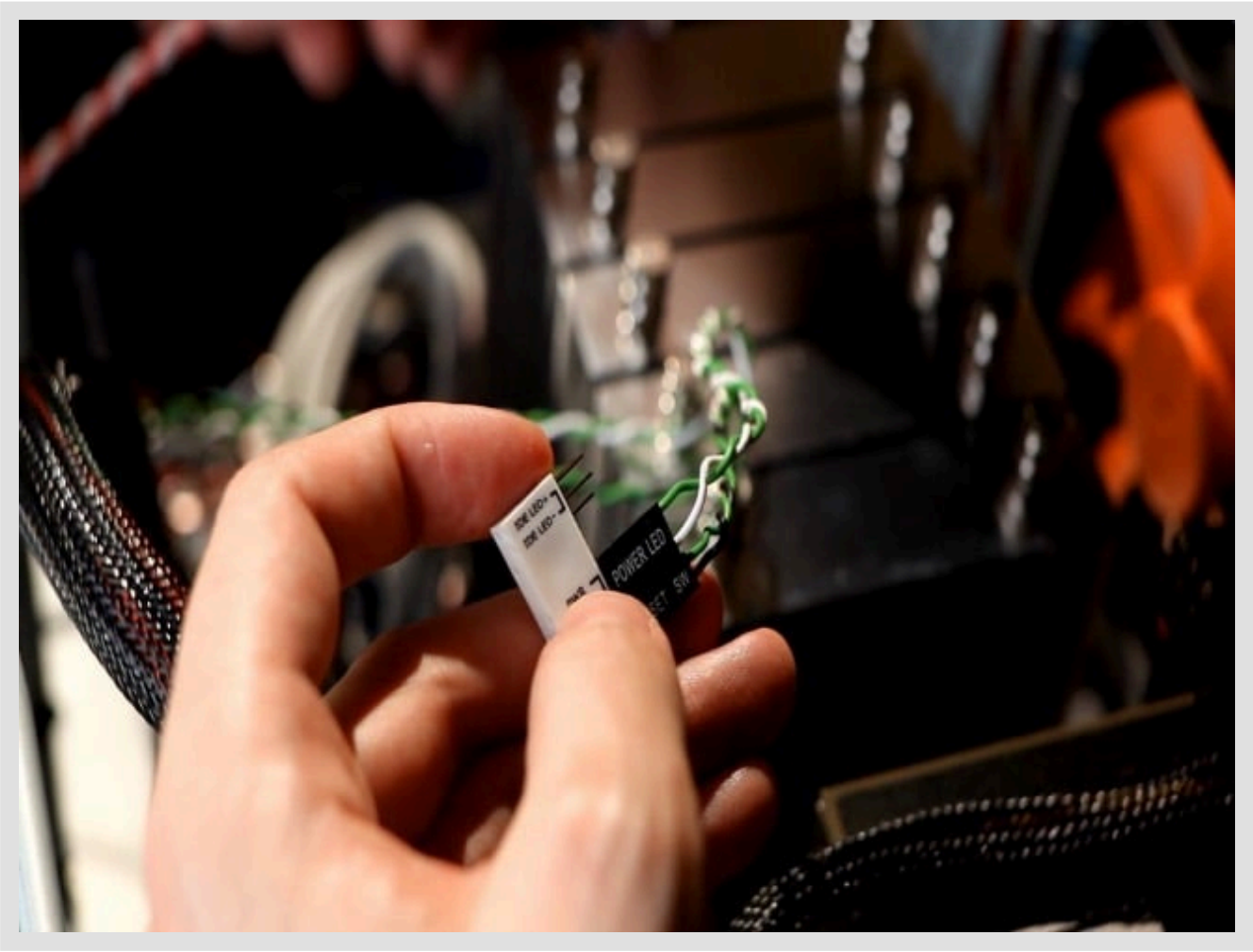
vertical IQ



Computer System Design Services

NAICS: 541512
SIC: 7373

prepared February 18th, 2022

Table of Contents

Coronavirus Update

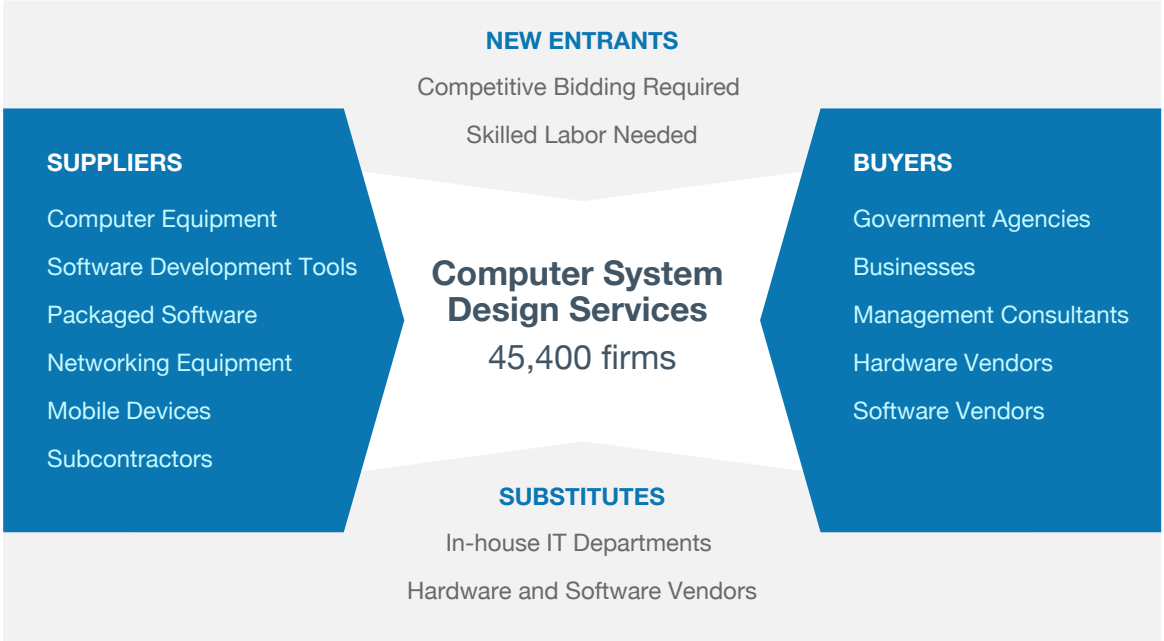
Feb 11, 2022 -- Cloud Infrastructure Spending Returns to Year-Over-Year Growth in Q3 2021

- Artificial intelligence (AI) is being used in various ways in response to the pandemic, which could create opportunities for computer system design services firms. UK-based BenevolentAI used its platform to analyze a massive trove of biomedical data through machine learning to make connections that led to identifying existing drugs that could effectively treat COVID-19 patients. Scientists are also using AI to reveal patterns in various data from patients infected with COVID-19 to discover why some barely experience any symptoms and others die. AI may also help doctors and scientists better understand how the coronavirus interacts with preexisting ailments to affect the immune system, leading to better outcomes for vulnerable patients.
- Technology experts have noted that outdated IT systems used in various federal government agencies delayed stimulus aid disbursements and other critical services. Experts have suggested that legacy IT systems led to small businesses' inability to apply for loans through the Small Business Administration and difficulties in consumers making unemployment benefit claims. Technology insiders say federal agencies need to leverage modern private sector technologies to speed up IT modernization efforts. High numbers of new unemployment claims also crashed antiquated IT systems on the state level. Many states' computer systems for managing unemployment benefits are more than 40 years old. Neither the CARES Act nor the two more recent stimulus packages provide any funding to states for modernization of state unemployment benefit IT systems. More attention to inefficient legacy systems could lead to opportunities for computer system design firms. Gartner expects global IT spending by governments to increase 6.5% to $557.3 billion in 2022. Responding to and recovering from the COVID-19 pandemic will drive governments to spend more on digital transformation. After rising a projected 17.6% in 2021, device spending is forecast to moderate and will fall 1.6% in 2022. Government spending on IT infrastructure and digital transformation will be enhanced by pandemic-related government stimulus packages like the US's American Rescue Plan Act and the European Union's NextGenEU.
- The pandemic could affect demand for computer system design services if small businesses cut back on investments, go out of business, or the rate of new business formations slows. More than two-thirds of small business owners in the US and Canada say they are worried that the Omicron variant will impact their ability to recover economically from the pandemic, according to the January 2022 Road to Recovery Report Alignable, a social media outlet for small business owners. Nearly 60% of respondents said the pandemic is having a negative impact on their business. About 70% of small business owners have yet to recover fully, and fewer than 35% report that their revenues are 90% or more than what they were before the pandemic. Inflation is the top concern for 30% of small businesses surveyed.
- After spending on critical, short-term projects during most of the pandemic, CIOs will focus more on their firms' longer-term digital transformations in 2022. Global IT spending is forecast to rise 5.1% in 2022 and reach more than $4.6 trillion, according to Gartner. IT spending grew an estimated 9% in 2021 over 2020. However, spending on devices is expected to moderate in 2022 after strong growth in 2021. Device spending grew 13% to $787.4 billion in 2021. Spending on devices is projected to slow to 3.3% growth in 2022, reaching $804.2 billion.
- At the onset of the pandemic, many organizations increased IT security spending as they implemented distributed IT and work-from-home environments, according to a recent IDG Research Services survey commissioned by Insight Enterprises. The rapid transition to work-from-home brought new security challenges across cloud, edge, and on-premise computing environments. Even after beefing up IT security spending amid the pandemic, 80% of senior IT and IT security leaders feel their organizations have insufficient protection from cyber threats. Demand for computer system design services may increase as organizations address the constantly evolving nature of cyber threats and their potential impact on distributed IT environments.
- A global semiconductor shortage is affecting the production of most types of electronic equipment, including IT gear. At the onset of the pandemic, consumer buying patterns shifted, and supply chains were disrupted. Carmakers cut back on production - and computer chip consumption - while home-bound consumers ramped up purchases of computers, game consoles, and other chip-containing electronics. When auto production bounced back, the whipsaw in chip demand made the semiconductor shortage worse. While Gartner expects chip inventories to normalize during the second quarter Of 2022, further restrictions or supply chain disruptions caused by Omicron could push the semiconductor supply recovery out to the fourth quarter.
- Worldwide spending on compute and storage products for cloud infrastructure resumed year-over-year growth in the third quarter of 2021 after a spending dip in Q2, according to a January report by International Data Corporation (IDC). In the third quarter of 2021, global spending on compute and storage products for cloud infrastructure grew 6.6% compared to Q3 2020,

reaching $18.6 billion. Growth was strongest for dedicated cloud infrastructure as spending rose 13.4% in Q3 to $5.6 billion compared to Q3 2020. Shared cloud infrastructure spending grew 8.6% to $13 billion. Investments in non-cloud infrastructure were up 7.3% in Q3 2021 on a year-over-year basis and reached $14.6 billion. IDC projects that cloud spending will continue to outpace non-cloud infrastructure. IDC estimates full-year spending on cloud infrastructure rose 8.3% in 2021 to $71.8 billion, while non-cloud investments increased 1.9% to $58.4 billion after two years of declines.

- Nearly 60% of organizations plan to increase their IT spending in 2022, according to Omdia's IT Enterprise Insights Report released in January 2022. The pandemic has accelerated enterprise IT spending as firms modernize their workplaces and invest in technologies that support revenue growth. Key areas of increased spending include security and supporting remote and hybrid working models. Among specific industry verticals, IT spending in 2022 is expected to be strongest in the healthcare, utilities, life sciences, and manufacturing industries.

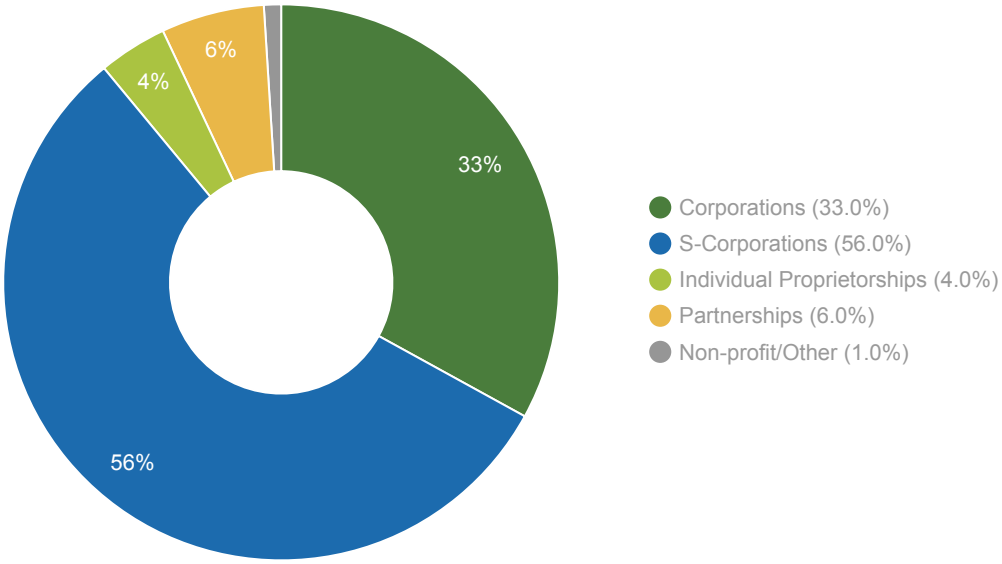
Industry Structure



The average computer system design service provider operates out of a single location, employs about 22-23 workers, and generates about $4-5 million annually.

- The computer system design services industry consists of about 45,400 companies that employ over 1 million workers and generate over $204 billion annually.
- The industry is concentrated at the top and fragmented at the bottom; the top 50 companies account for 55% of industry revenue.
- Large firms, which include IBM, GDIT, and Unisys, typically have global operations.

Industry Demographics



Source: US Census Bureau

Female Owned

16.0%

Minority Owned

28.0%

Veteran Owned

7.3%

Source: Census Bureau

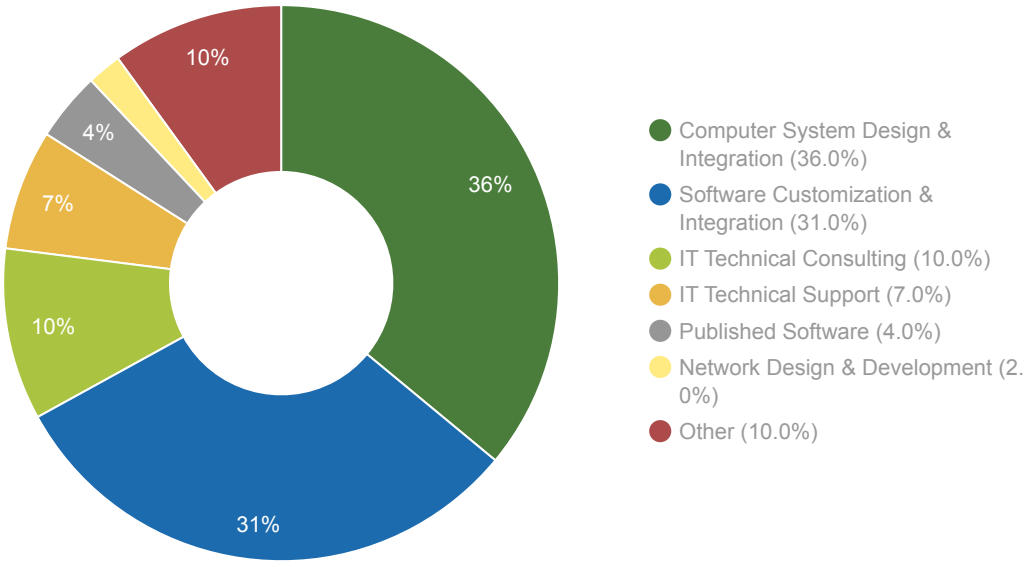
How Firms Operate

Products and Operations

Computer system design services providers integrate computer hardware, software, and communication technologies.

- Types of services include computer systems design, development, and integration; customer application design and development; and IT technical consulting and support.
- Firms may also provide services related to network development and design, cybersecurity, and communications.
- Private sector clients account for more than 70% of industry revenue. Federal government projects account for 21%, and state and local government projects account for about 7%.

Computer System Design Services Revenue



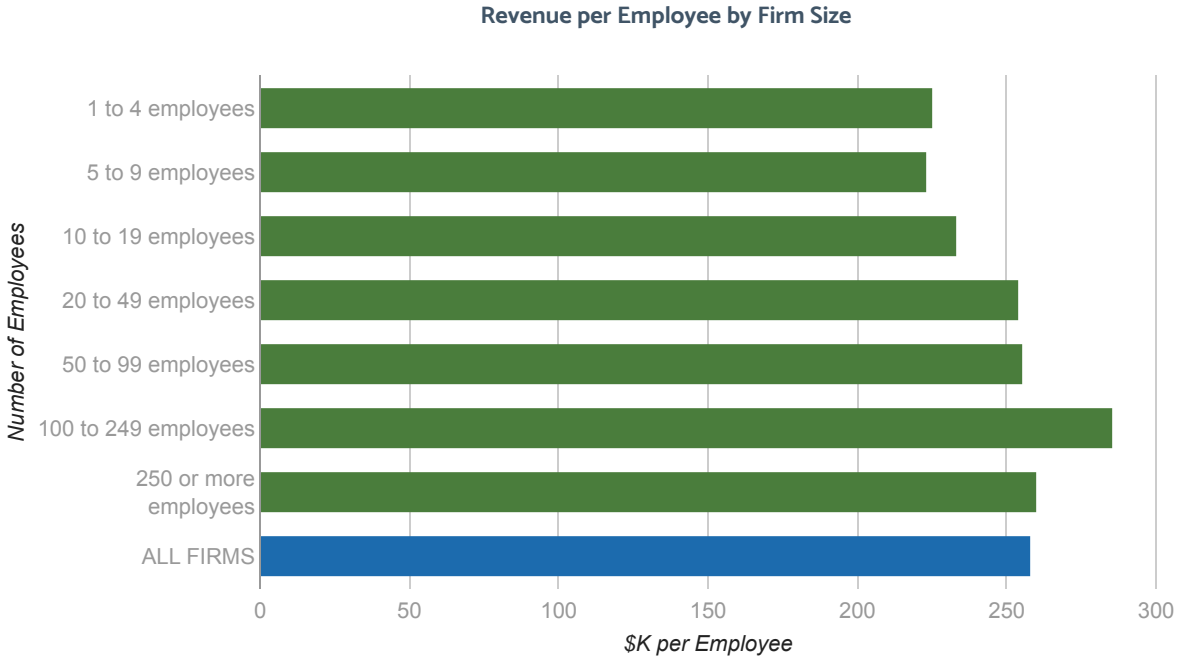
Source: US Census Bureau

Application design and development includes services related to websites, databases, cross-industry applications, vertical market applications, and packaged software. Companies may provide hardware and software components as part of integrated service offerings or rely on third parties or vendors. Firms may install systems and train and support users. Computer system design services providers may specialize in a particular vertical, such as government organizations, health care, or financial services, or serve clients across a wide range of industries.

Companies help clients optimize their information technology infrastructure and simplify management of data centers, systems and service delivery. Firms may offer services related to cloud and infrastructure, business process outsourcing, data analytics, and advanced security capabilities. Large companies that sell proprietary hardware or software focus on building an installed base of customers that serves as a foundation for future products. Firms may also work with third-party suppliers and focus on the integration of different types of vendor products.

Companies may help clients install Enterprise Resource Planning (ERP) management information systems, which integrate information from multiple areas of client operations, including planning, purchasing, inventory, sales, marketing, finance and human resources. Large software firms have developed ERP applications to help different departments communicate and share information with the rest of the company.

The industry is extremely labor-intensive and relies on a high skilled workforce, which includes computer programmers, software engineers, and other professionals with in-depth technical expertise.



Source: US Census Bureau

Profit Drivers

Improving New Contract Win Percentage

Firms typically submit competitive bids to win new contracts and can incur significant costs preparing bid proposals. Failure to win a sufficient percentage of bids results in a high level of unproductive expenses and a decrease in the firm's project backlog. Firms invest in proposal management software and knowledge management systems to improve the quality of bid submissions and automate the proposal development process.

Accurately Forecasting Project Costs

Computer system design projects can be large and complex and firms must accurately forecast the time and effort to complete them to prepare competitive bids and avoid cost overruns. They typically build some extra cost for contingencies into bids, but risk becoming uncompetitive on price if contingency costs are too high. Experienced project managers and project management software help to improve the accuracy of project estimates.

Achieving High Billable Hours

Computer system design services rely on highly paid technical staff to win business and successfully complete projects. They seek to achieve a high rate of billable hours to client projects for their technical staff to reduce overhead expenses. Maintaining a large project backlog and completing projects on time makes it easier to schedule staff and avoid unbillable idle time.

Effectively Managing Projects

Computer system design services rely on managers with strong project management skills to keep projects on time and within budget. Effectively managing projects is key to both the profitability of the project and achieving high client satisfaction that can lead to follow on projects. Firms use sophisticated project management systems to schedule and track progress of large projects.

Industry Trends

Trends are affected by the COVID-19 pandemic.

Changes in revenue, employment, business practices, trade and forecasts are occurring rapidly and data reporting by the government lags the changes. We are tracking changes in the "Coronavirus Update" chapter.

Job Growth For Software Engineers

Demand for software developers and engineers and other tech workers continues to grow, as the industry struggles to maintain an adequate workforce. Employment of software developers is projected to grow 21.5% between 2019 to 2029, significantly faster than the average for all occupations. Growing demand for computer software continues to drive demand for both types of workers.

Public Cloud Adoption Growth

The global public cloud market is growing at a robust rate to support hybrid workforces (in office and at home). Growth for the worldwide public cloud services market is projected to grow 23.1% in 2021 and 19.6% in 2022, according to Gartner, Inc. Cloud application infrastructure services are projected to grow 28.3% in 2021 and 20.3% in 2022. Cloud application services are expected to grow 19.3% in 2021 and 18.5% in 2022. Growth is expected to be highest for cloud system infrastructure services at 38.5% in 2021 and 30.2% in 2022. Cloud investment has become a top priority as businesses move complex workloads.

Flexible Consumption Models

The pay-per-use business model has become increasingly popular in the information technology industry and its prevalence is expected to grow. According to Gartner, a vast majority of software vendors are now using a consumption-based model. This trend started with cloud-based software-as-a-service (SaaS) offerings that allowed customers to move away from buying hardware and software outright and instead to purchase computer power and storage as needed, according to a report by Deloitte. As delivery methods evolve, computer design services providers will need to adapt how they design IT infrastructure, with an increased emphasis on security, and offer related services.

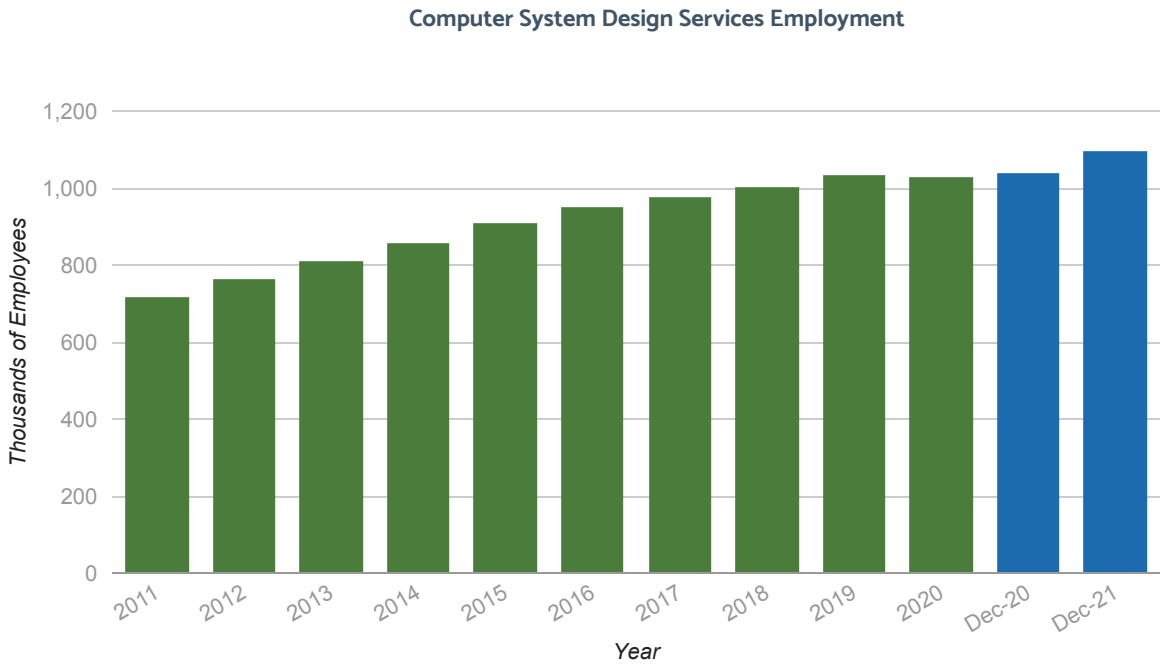
Big Data, Big Growth

Demand for services related to data analytics is projected to grow, driven by the increased availability of data, a new generation of technology, and a cultural shift toward data-driven decision making. Worldwide revenues for big data and business analytics are expected to grow at a CAGR of 12.8% through 2025, according to IDC. Industries that account for just over 50% of worldwide big data and business analytics investments and the majority of growth include banking, discrete manufacturing, process manufacturing, federal/central government, telecommunications and professional services, with telecommunications accounting for the fastest spending growth.

Employment and Wage Trends

Employment by computer system design services increases

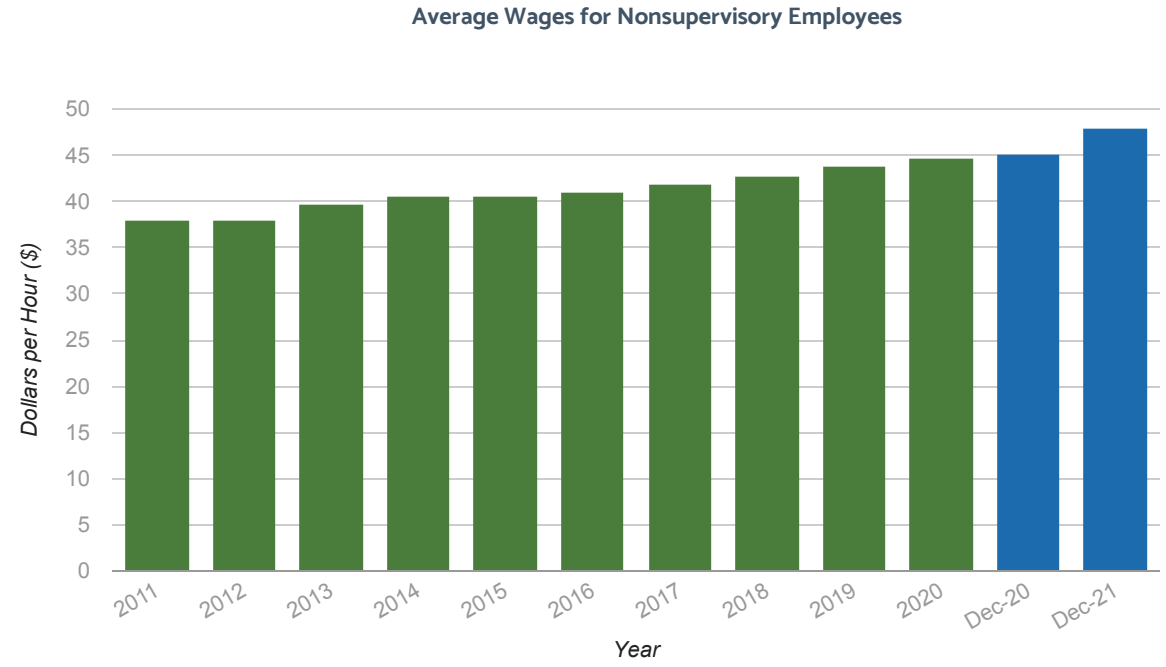
Overall employment by computer system design services changed 5.5% in December compared to a year ago, according to the latest data from the Bureau of Labor Statistics.



Source: Bureau of Labor Statistics

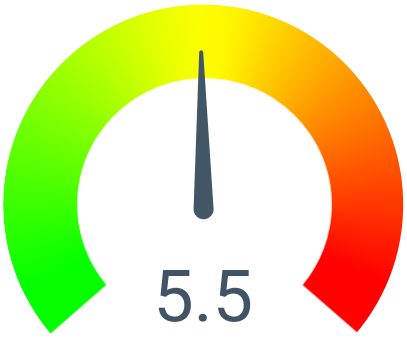
Wages at computer system design services rise

Average wages for nonsupervisory employees at computer system design services were $47.75 per hour in December, a 6.2% change compared to a year ago.



Source: Bureau of Labor Statistics

Credit Underwriting and Risks



Industry Risk Rating:
Stable/Satisfactory

Business Exit Rates:	7.0	Higher than US average for all businesses
Cyclical Sensitivity:	5.0	Moderate Sensitivity
Barriers to Entry:	3.6	High initial capital; very high regulatory/technical barriers; high concentration
External Risk:	6.5	High external risk
Industry Outlook:	5.3	Comparable to GDP; some cyclical risk
Financial Summary:	5.4	Low margins; high liquidity; moderate leverage

Key Metrics

METRIC	VALUE	COMPARISON
Performance During 2007–2009 Recession	-0.1%	0.0% GDP
Business Exit Rate 2019–2020	11.17%	9.0% All Industries
Compound Annual Growth Forecast (2020–2025)	4.33%	6.1% GDP
SBA 7(a) Default Rate by Number of Loans (2010–2019)	3.96%	3.82% All Industries
SBA 7(a) Default Rate by Gross Loan Amount (2010–2019)	1.70%	1.21% All Industries

Underwriting Considerations

- Long sell cycle, how has the company managed cash through this period? Lines of Credit typically collateralized by AR. Any concentrations with AR?
- How has the company managed security breaches in the past? Any incidences?
- Does the client have government contracts? What percentage?

Industry Risks

Sensitivity to Economic Conditions and Government Spending

Demand for computer system design services is dependent on conditions in both the private and public sectors, which are vulnerable to changes in economic conditions. Businesses often cut back on spending during periods of economic uncertainty and may delay or cancel major information technology projects. Government contracts have unique considerations; changes in budgetary priorities or a significant decline or shift in expenditures can greatly affect demand for technology-related services in the public sector. The industry lagged economic trends during the last recession; the number of establishments dropped about 5% annually in 2011 and 2012 and employment decreased about 4% during 2011. The level of risk varies according to a company's client mix.

Competition from Alternative Service Providers

Computer system design services providers face competition from a variety of alternative service providers, including management consulting firms, commercial IT vendors, and client in-house IT departments. Management consulting firms are well-established in the IT world and serve major, global clients. Commercial IT vendors, which provide hardware, software, and infrastructure and application services, have migrated into service offerings because of more lucrative margins. In some cases, an in-house IT department makes better sense financially than outsourcing services. Integrated system services providers sometimes partner with competitors in the appropriate situations to win business.

Dependence on Skilled Labor

The computer system design services industry relies on a highly skilled, highly paid workforce, which includes computer and software engineers, programmers, systems integrators, and management with experience in information technology. Competition for skilled personnel is intense, and companies often struggle with high attrition. Shortages of qualified workers exist, with some firms relying on skilled labor in foreign countries to fill the gaps.

Rapid Advances in Technology

The computer and information systems management industry is characterized by rapid advances in technology that create volatility and uncertainty. Evolving technology standards, short product life cycles, and continually changing customer demand patterns require firms to invest and adapt quickly to variations in market conditions. Failure to anticipate or respond to changes in technology, industry standards or customer preferences can jeopardize business.

Dependence on Third Parties

Computer system design services providers often work with subcontractors, as a subcontractor, or as part of a team of contractors. As a subcontractor or teammate, firms have limited control over fulfillment of a contract, and poor performance on the overall contract could affect the customer relationship, even if the firm meets its own requirements. As the prime contractor, companies depend on technology suppliers, channel partners and other parties that have complementary products, services, or skills. Failure of any one party in the supply chain can compromise the success of an engagement.

Security Breaches

Well-publicized incidents of cybersecurity breaches have exposed the vulnerability of computer systems, even those of large companies that were thought to be secure. Security is a critical element in information systems design, and firms must protect client systems and data from breaches involving hackers, other third parties, or the company's employees. The unauthorized disclosure or misuse of client information can result in legal liability and litigation and damage a firm's reputation.

Company Risks

Dependence on Large Customers and Bid Protests

Some firms are dependent on a limited number of clients for a substantial percentage of business. Computer system design services providers that rely on government contracts incur additional risk because unsuccessful bidders can protest awards, a practice that can result in an increase in expenses related to obtaining contract awards or an unfavorable modification or loss of an award. Bid protests, even if they are unsuccessful, can delay work and the related revenue.

Big Projects, Lengthy Sell Cycles

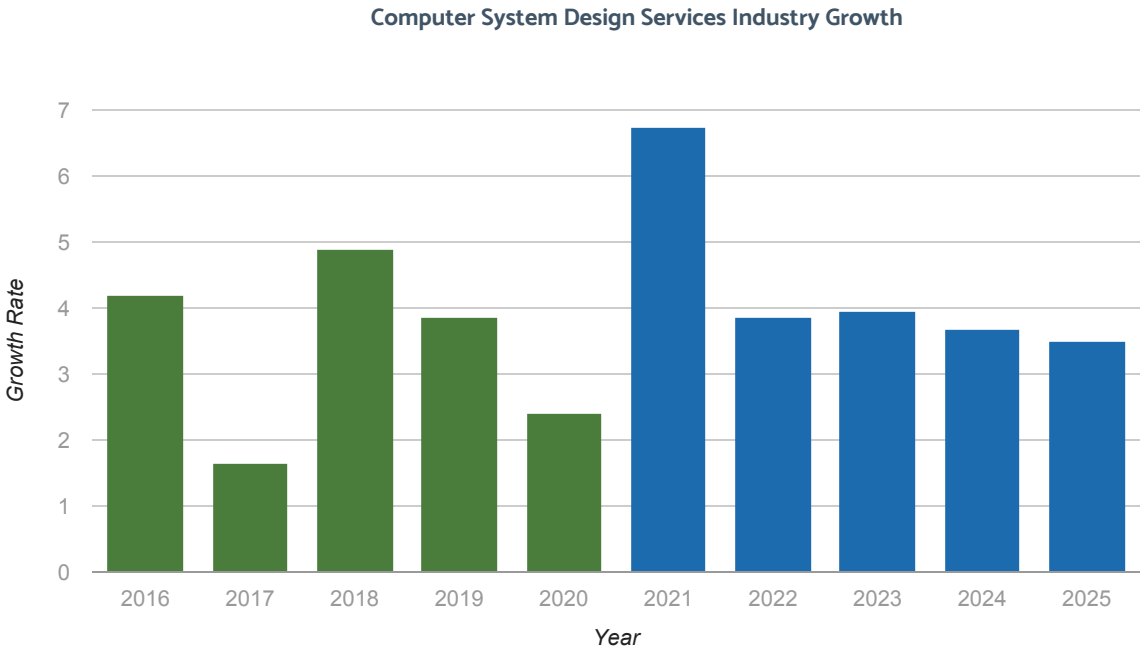
The initial installation or redesign of an IT system is typically a major undertaking that involves extensive discussion and funding. Because information technology projects can be incredibly disruptive to and expensive for a client, contracts usually involve a lengthy sell cycles and extended negotiations. Combined with a competitive bidding situation, the long sales cycle adds an extra layer of uncertainty when pursuing contracts.

Industry Forecast

Sales for the US computer system design services industry are forecast to grow at a 4.33% compounded annual rate from 2020 to 2025, slower than the growth of the overall economy.

Vertical IQ forecasts are based on the Inforum inter-industry economic model of the US economy. Inforum forecasts were prepared by the Interindustry Economic Research Fund, Inc.

Last Update: August 2021



Source: Interindustry Economic Research Fund, Inc.

Working Capital

Sell and invoice

Computer system design services providers typically generate business through a competitive bidding process for contracts with clients. Contract costs include material, labor, subcontracting costs, and other direct costs, as well as an allocation of indirect costs. Multiple-element arrangements include any combination of software, hardware, or services and involve deliverables and tangible products provided at different points in time.

> 20% of computer services said they go to their accountant or bookkeeper for cash flow advice, while 17% turn to their banker and 78% do not seek advice, according to a survey of small businesses by Barlow Research Associates.
>
> *Source: Barlow Research Associates.*

With fixed-price contracts, which are common for government projects, the risk of cost overruns and contingent losses limit profits and can result in a loss. Other types of contracts include cost reimbursement and time-and materials. Indefinite delivery/indefinite quantity (IDIQ) contracts provide for an indefinite quantity of services for a fixed time. Government wide acquisition contracts (GWACS) are IDIQ contracts that are awarded to more than one of a pre-selected group of vendors. Large contracts may span multiple years and involve periodic payments. Labor is typically billed at an hourly rate.

Collect

Most companies offer customer credit. Billing and collection procedures vary depending on the type of contract. Government contracts typically use the percentage-of-completion method of accounting, and may bill according to expected contract revenues and costs. Customers may also direct firms to bill upon the completion of a contract, completion of government audit activities, or until negotiation of contract modification or claims.

Collection periods average 57 to 60 days, and receivables average about 42-44% of assets. Firms that work as subcontractors may experience delays in payment from primary contractors.

Manage Cash

Cash flow is dependent on the number, size, type, and timing of contracts with clients. Contract wins or awards are a primary driver of future revenue and cash flow, and the number of contract wins can fluctuate from year to year. Client retention is also important in sustaining cash flow. Firms may lose clients for a number of reasons, including contract expiration, conversion to a competing service provider, dissatisfaction or disputes, or the decision to in-source services.

Cash flow can be somewhat seasonal, depending on the type of client. Sales from corporate clients may peak during the fourth quarter of a fiscal year, while government sales often surge just prior to September 30, the end of the US government's fiscal year. Lines of credit supplement working capital requirements.

Gross margins can vary depending on the type of project. Services typically generate higher margins than product sales. Government contracts tend to carry lower margins than contracts in the private sector.

Pay

Labor costs vary, but average about 44-47% of sales. Compensation in the information technology industry is high, due to the level of education and expertise required and competition for qualified workers, and often includes performance-based incentives. Firms may rely on independent contractors or third-party firms to fill gaps in their workforces or provide expertise unavailable internally on certain projects. Some firms outsource work to contractors in foreign countries.

Rent averages 2-3% of sales and advertising averages about 2-3% of sales.

Report

After-tax net profit averages 4-5% of sales. The number of contract wins or awards is an indicator of future revenue. A strong customer retention rate typically signals steady business and cash flow. A company's backlog represents the total estimated remaining value of contracts. Firms may break out revenue by the type of contract (fixed price, cost reimbursement, time and materials) or type of client. Days Sales Outstanding is also an important metric because of industry's long average collection period.

Cash Management Challenges

Cash Shortfalls Due To Project Delays Or Overruns

Computer system design projects can be large and complex, involving large technical teams and months or years of work. Payments from clients are typically tied to achievement of project milestones and schedule delays result in payment delays, even though firms must continue to pay for workers and supplies. This can cause short-term cash shortfalls for firms. For fixed-price contracts, delays can lead to cost overruns that reduce the profitability of the contract.

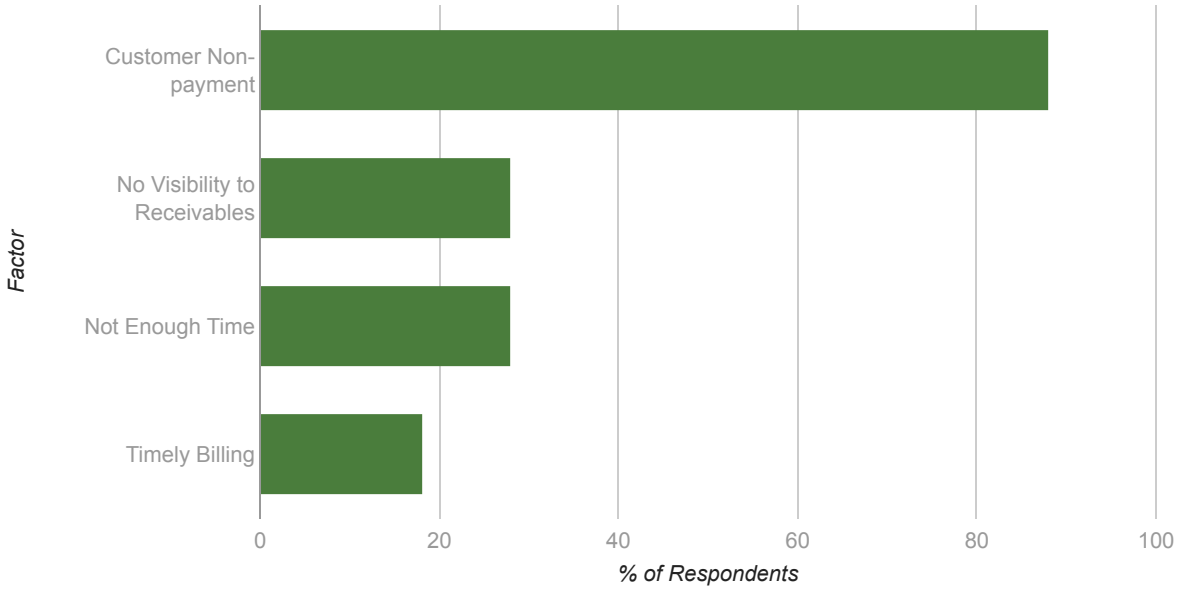
Funding Business Development Expenses

Firms often win new business through a competitive bidding process, particularly for government projects. They incur costs to develop bid proposals, often many months in advance of the contract being awarded. These costs are not recouped if they fail to win the contract. Time spent on developing proposals also takes staff away from billable work for other clients. Failure to win new business creates both short-term and long-term cash flow issues.

Funding Investments In Technology And Training

Computer system design services must continually invest in new technology and staff training to stay competitive. Skills in new technology areas, such as machine learning, big data analysis, and AI, are required to win new contracts and to attract and retain technical staff. Technical staff want to keep up with the latest technology and will change jobs if not given the opportunity and training to do so.

Factors Causing Cash Flow Stress: Computer Services



Source: Barlow Research Associates

Capital Financing

Projects that require capital financing include the purchase of property, buildings, technology and information systems. Computer system design services providers may lease office space to provide flexibility and minimize capital expenditures.

Firms generally invest in computerized information systems to manage administrative operations. Specialized software programs automate a variety of tasks, including scheduling, payroll, project management, accounting, and financial reporting. Sophisticated computer systems allow firms to participate in complex engagements that involve managing and analyzing large amounts of data. Major firms serve clients throughout the world through extensive computer networks.

Firms require capital to fund growth initiatives, through new locations, expansion, or acquisition. Companies often expand by increasing market share and acquiring other firms with specialized expertise in high growth areas, such as cybersecurity, healthcare, and data analytics.

Sources of financing for large, publicly held firms include cash, stock, debt, or a combination. Other sources of capital financing include commercial loans and private equity.

Examples of Equipment Purchases

Laptop Computers

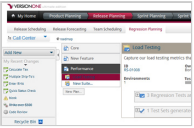
$800 - 2,000

High-performance laptop computer for software development and testing.

Server Systems

$3,000

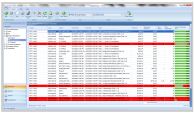
Computer servers for networking, application hosting, data storage, and Internet access.



Software Development Tools

$3,000 - 5,000 (Annually for 10 users)

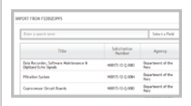
Software tools integrating project management, change management, and code sharing across multiple software developers.



Project Management Software

$2,500 - 150,000

Software for planning and managing tasks of complex projects, including work by subcontractors.



Business Development Software

$2,500 - 100,000

Software for managing bid proposals and pricing. May also include modules for identifying and analyzing contracting opportunities through links to federal and state procurement systems.

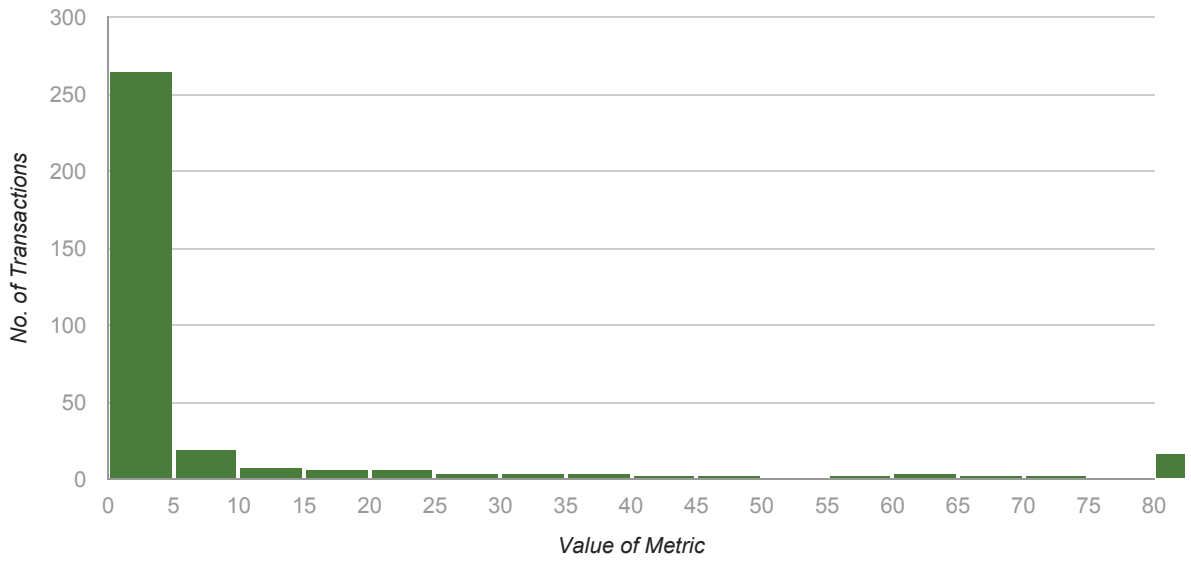
Business Valuation

This data on business valuations is supplied by DealStats, an online database with the most complete financial details on nearly 36,000 acquired companies. These companies are mostly small and medium-sized private firms.

Summary Valuation Data for Computer System Design Services

	MEDIAN	MEAN	# TRANSACTIONS	DATES
Price to Net Sales	1.2	120.9	327	03/23/1995–06/10/2021
Price to Gross Profits	2.7	140.27	301	03/23/1995–06/10/2021
Price to EBITDA	11.88	100.5	165	03/23/1995–06/10/2021
Price to EBIT	10.68	24.23	188	03/23/1995 –06/10/2021

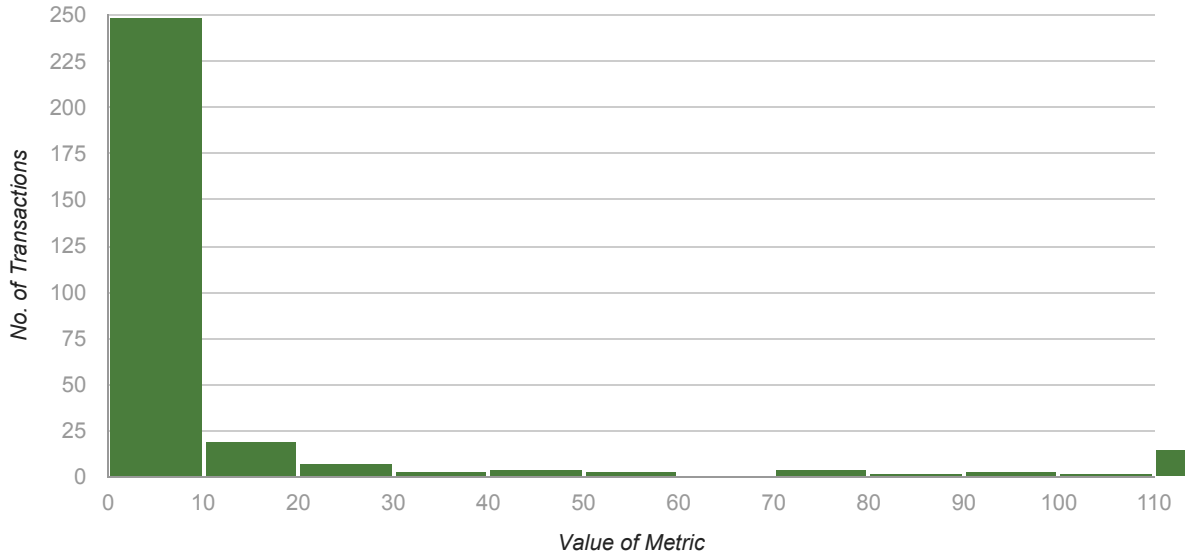
Click on the metric below to see a distribution of transactions for the industry:



Source: DealStats

Count: 327 **Min:** 0.03 **Max:** 28421.61 **Mean:** 120.9 **Median:** 1.2

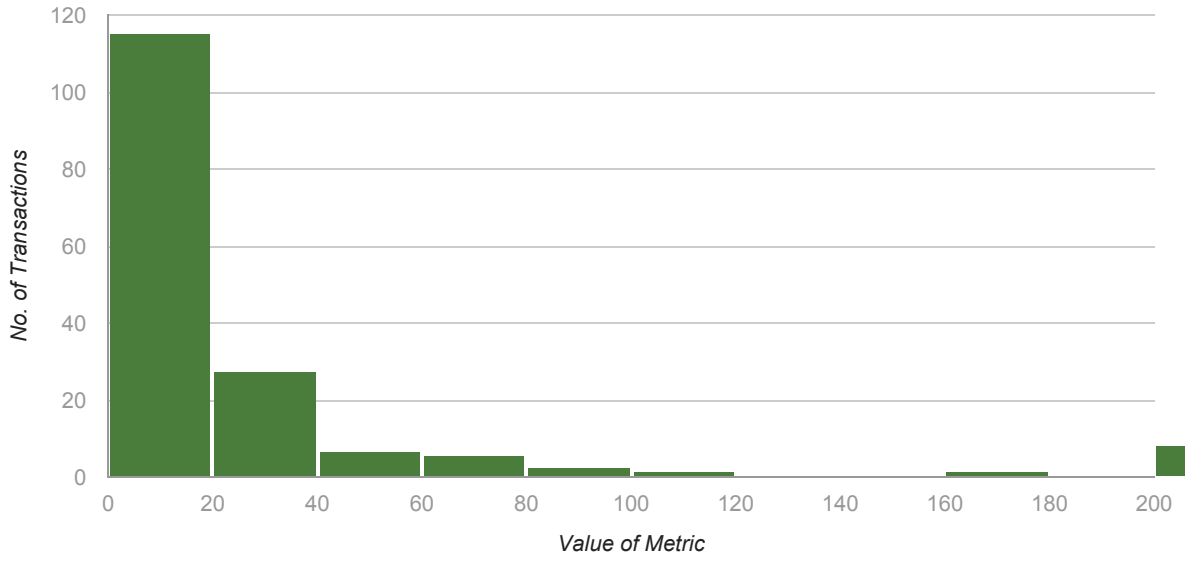
Price to Sales = Selling Price/Net Sales
Date range: 03/23/1995 - 06/10/2021



Source: DealStats

Count: 301 **Min:** 0.12 **Max:** 30364.15 **Mean:** 140.27 **Median:** 2.7

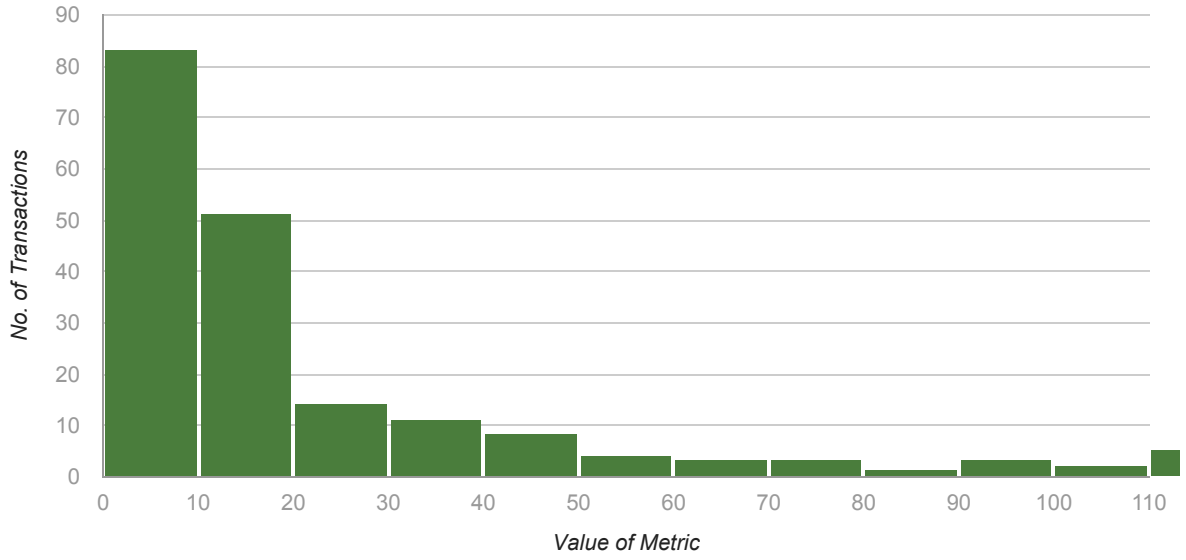
Price to Gross Profit = Selling Price/Gross Profit
Date range: 03/23/1995 - 06/10/2021



Source: DealStats

Count: 165 **Min:** 1.76 **Max:** 5940.79 **Mean:** 100.5 **Median:** 11.88

Price to EBITDA = Selling Price/Operating Profit + Depreciation & Amortization
Date range: 03/23/1995 - 06/10/2021



Source: DealStats

Count: 188 **Min:** 1.12 **Max:** 290.55 **Mean:** 24.23 **Median:** 10.68

Price to EBIT = Selling Price/Operating Profit
Date range: 03/23/1995 - 06/10/2021

Selling Price, also known as MVIC (Market Value of Invested Capital) *is the total consideration paid to the seller and includes any cash, notes and/or securities that were used as a form of payment plus any interest-bearing liabilities assumed by the buyer. The MVIC price includes the noncompete value and the assumption of interest-bearing liabilities and excludes (1) the real estate value and (2) any earnouts (because they have not yet been earned, and they may not be earned) and (3) the employment/consulting agreement values. In an Asset Sale, the assumption is that all or substantially all operating assets are transferred in the sale. In an Asset Sale, the MVIC may or may not include all current assets, non-current assets and current liabilities (liabilities are typically not transferred in an asset sale).*

Source: DealStats 2019 (Portland, OR; Business Valuation Resources LLC). Used with permission. DealStats is available at https://www.bvresources.com/learn/dealstats

Financial Benchmarks

The following financial benchmark data is based on annual financial statements submitted by member institutions of the Risk Management Association from Q2 of the first year listed through Q1 of the following year.

Financial Ratios (Computer System Design Services, Industry-wide)

MEASURE	2018-19	2019-20	2020-21
Current Ratio	1.33	1.33	1.44
Quick Ratio	1.08	1.07	1.19
Days Inventory	12.25	10.14	18.81
Days Receivables	58	57	64
Days Payables	48.94	50.25	47.8
Pre-tax Return on Revenue	3.55%	3.10%	5.50%
Pre-tax Return on Assets	8.75%	8.10%	9.57%
Pre-tax Return on Net Worth	30.65%	27.04%	29.70%
Interest Coverage	9.07	8.82	11.12
Current Liabilities to Net Worth	1.76	1.71	1.22
Long Term Liabilities to Net Worth	0.74	0.63	0.88
Total Liabilities to Net Worth	2.50	2.34	2.10
Number of Firms Analyzed	*1,358*	*1,159*	*288*

Income Statement (Computer System Design Services, Industry-wide)

ITEM	2018-19	2019-20	2020-21
Revenue	100.0%	100.0%	100.0%
Cost of Sales	57.02%	58.35%	51.74%
Gross Margin	42.98%	41.65%	48.26%
Officers Compensation	0.98%	0.77%	1.51%
Salaries-Wages	16.91%	16.72%	17.82%
Rent	1.03%	0.99%	1.85%
Taxes Paid	1.6%	1.53%	1.93%
Advertising	0.69%	0.69%	1.16%
Benefits-Pensions	1.77%	1.73%	2.35%
Number of Firms Analyzed	*1,358*	*1,159*	*288*

ITEM	2018-19	2019-20	2020-21
Repairs	0.25%	0.24%	0.34%
Bad Debt	0.13%	0.12%	0.12%
Other SG&A Expenses	12.04%	11.85%	11.62%
EBITDA	7.58%	7.01%	9.55%
Amortization-Depreciation	1.48%	1.35%	2.2%
Operating Expenses	36.88%	35.99%	40.9%
Operating Income	6.1%	5.66%	7.36%
Interest Expense	0.89%	0.63%	0.76%
Other Income	0.05%	0.05%	-0.9%
Pre-tax Net Profit	5.16%	4.98%	7.5%
Income Tax	0.25%	0.41%	-0.28%
After Tax Net Profit	4.91%	4.57%	7.78%
Number of Firms Analyzed	*1,358*	*1,159*	*288*

Balance Sheet (Computer System Design Services, Industry-wide)

ASSETS	2018-19	2019-20	2020-21
Cash	22.13%	22.85%	27.15%
Receivables	42.75%	43.42%	36.56%
Inventory	4.72%	5.11%	3.06%
Other Current Assets	6.28%	7.37%	4.59%
Total Current Assets	75.88%	78.75%	71.36%
Net Fixed Assets	9.73%	8.59%	8.11%
Net Intangible Assets	7.5%	6.71%	11.51%
Other Non-Current Assets	6.89%	5.96%	9.02%
Total Assets	*100.0%*	*100.0%*	*100.0%*

LIABILITIES			
Accounts Payable	22.5%	23.62%	14.17%
Loans/Notes Payable	12.62%	11.36%	11.77%
Other Current Liabilities	20.13%	18.33%	17.64%
Number of Firms Analyzed	*1,358*	*1,159*	*288*

LIABILITIES			
Total Current Liabilities	55.25%	53.31%	43.58%
Total Long Term Liabilities	15.53%	12.35%	22.94%
Total Liabilities	70.78%	65.66%	66.52%
Net Worth	29.22%	34.34%	33.48%
Total Liabilities & Net Worth	100.0%	100.0%	100.0%
Number of Firms Analyzed	*1,358*	*1,159*	*288*

Vertical IQ financial benchmark data is based on data provided by the Risk Management Association (RMA) and Powerlytics, Inc. RMA's Annual Statement Studies provide comparative industry financial benchmarks based on financial statements of small and medium business clients of RMA's member institutions. Additional detail on income statement line items is provided using Powerlytics financial benchmarks, which are based on reporting submitted to the IRS. Additional detail on these data sources can be found at RMA and Powerlytics.

Bank Product Usage

Top Bank Products Used by Computer System Design Services

The following table provides the frequency of bank product usage by Computer System Design Services with less than $10 million in annual revenue. It is provided by Barlow Research Associates, Inc., the premier market research firm in the financial services industry.

BANK PRODUCT	% OF FIRMS
Business checking account services	100.0
Automated clearing house services (ACH)	97.0
Business debit card or business check card	85.0
Business savings or money market account	82.0
Wire transfer services	81.0
Overdraft protection for business checking	74.0
Electronic payments initiated through the Internet (Bill Payment)	70.0
Remote deposit capture (scanning checks at your office or by mobile device for electronic deposit)	68.0
Business credit card issued in your company's name (Visa, MasterCard, Amex, etc.)	56.0
Credit lines secured by receivables, inventory, property or other assets	56.0
Point-of-sale credit card processing	47.0
Money market mutual funds or short-term investments	43.0
Unsecured short-term loans or working capital line of credit (less than one year)	35.0
Company sponsored 401(k), SEP, pension or profit sharing plan	34.0
Account reconciliation processing (ARP)	27.0
Payroll processing	27.0
SBA loans	26.0
Commercial real estate mortgage	24.0
Commercial real estate mortgage (company occupied building)	22.0
Commercial real estate mortgage (investment property)	22.0
Certificates of deposit	22.0
Term loans or equipment financing (one year +)	21.0
Overnight investment or sweep accounts	19.0
Equipment leasing	19.0
International (foreign exchange, import/export letters of credit)	19.0
Accounts receivable collection (lockbox)	19.0

Barlow's Small Business Banking program is a multi-client research program sponsored by leading banks. Each quarter, a stratified random sample of businesses throughout the United States with sales between $100,000 to $10 million compiled from an independent list provider are invited to participate in a comprehensive banking survey of over 100 questions. The results measure channel adoption, bank satisfaction, brand power, account management, service quality, business product usage and the selling abilities of leading providers. The results in this chapter are calculated directly from the business product usage section and represent usage for the average small business ($100K-<$10MM).

For more information on Barlow's banking research, go to http://www.barlowresearch.com/

Quarterly Insight

4th Quarter 2021

Digital Transformation Spending to Double by 2025

Global spending by organizations to further their digital transformations (DX) is expected to reach $2.8 trillion by 2025, double the spending level seen in 2020, according to International Data Corporation (IDC). Pursuing holistic digital strategies to manage data, governance, people, processes, and technology will drive average annual DX spending growth of 16.4% through 2025. Much of the investment in DX will be in support of back-office and infrastructure for accounting and finance, HR, legal, security and risk, and enterprise IT. Manufacturing will experience the most DX spending among specific industries through 2025, followed by professional services and retail. Industries that will see the fastest DX spending growth will include construction (average annual growth of 21%), securities and investment services (+19.2%), and banking (+19%). The US is forecast to drive one-third of global DX spending through 2035.

3rd Quarter 2021

Global Cloud Infrastructure Spending Posts Solid Q1 Growth

As the gradual economic recovery from the COVID-19 pandemic continues, worldwide spending on compute and storage products for cloud infrastructure, including dedicated and shared environments, grew more than 12% in the first quarter of 2021 compared to the same period in 2020, according to a July report by International Data Corporation (IDC). The pandemic increased reliance on cloud platforms in support of commercial, educational, and social applications which are expected to continue to boost cloud investments that drive digital transformation efforts. IDC expects global cloud infrastructure spending in 2021 to grow nearly 13% and exceed $74 billion; non-cloud infrastructure spending is projected to rise 2.7% to more than $58 billion.

2nd Quarter 2021

Global Semiconductor Shortage May Persist Into 2022

A global semiconductor shortage is affecting production of most types of electronic equipment, including computer systems. At the onset of the pandemic, consumer buying patterns shifted and supply chains were disrupted. Carmakers cut back on production - and computer chip consumption - while home-bound consumers ramped up purchases of computers, game consoles, and other chip-containing electronics. When auto production bounced back, the whipsaw in chip demand – combined with US sanctions on Chinese tech and bad weather – made the semiconductor shortage worse. Gartner expects the shortage could persist into Q2 of 2022. Gartner suggests chip-dependent industries extend their supply chain visibility to the silicon level to better project supply constraints and bottlenecks. Tech industry watchers suggest consumers and businesses should plan to spend more for chip-heavy products and expect extended lead and/or wait times.

1st Quarter 2021

Quantum Computing to Gain Ground

The use of quantum computing is expected to build up steam over the next several years, according to director of IBM Research Dr, Dario Gil in speaking at The Wall Street Journal's virtual CIO Network summit. Quantum computing uses the properties of quantum physics to process very large numbers of possible outcomes and propose solutions. The technology has been limited by hardware issues. IBM plans to release new quantum systems in 2021 and 2022, but its planned offering for 2023 will potentially overcome the hardware issues by allowing errors to be addressed with software. Once error issues are remedied, quantum adoption is expected to accelerate. In addition to IBM, Google and Microsoft are working to bring quantum computing offerings to market, according to The Wall Street Journal.

4th Quarter 2020

Cloud a Key Driver of IT Spending

Experts say the cloud proved its value proposition during the pandemic as enterprises were able to shift to on-demand, scalable solutions for work from home and other technology needs. Global end-user spending on public cloud services is forecast to rise 18.4% in 2021, reaching $304.9 billion, according to Gartner. The COVID-19 pandemic is accelerating the shift to cloud, which is expected to account for more than 14% of total worldwide enterprise IT spending by 2024, up from about 9% in 2020. Gartner survey data suggests 70% of organizations using cloud services plan to increase cloud spending after COVID-19 caused disruptions.

3rd Quarter 2020

Outdated Federal Computer Systems Slowed Stimulus Aid

In a July hearing by the House Subcommittee on Government Operations, lawmakers heard from technology experts how outdated IT systems used in various federal government agencies delayed stimulus aid disbursements and other critical services. Experts referenced computer systems that are several decades old. House subcommittee members suggested legacy IT systems led to small businesses being unable to apply for loans through the Small Business Administration and as many as 40% of unemployment benefit claims to be unsuccessful. Experts say federal agencies need to leverage modern private sector technologies to speed up IT modernization efforts. More attention to inefficient legacy systems could lead to opportunities for computer system design firms.

2nd Quarter 2020

Work-from-Home May Drive Demand

Although all 50 states have begun various steps toward reopening, working from home is expected to be much more common even after the pandemic subsides. Tech support for workers may shift to a remote model instead of supporting users in an office setting. As working from home becomes more common, companies of all kinds will need to make investments in secure networks, enhanced communications, and other technologies which may drive demand for computer facilities management services.

1st Quarter 2020

Judge Blocks Awarding of Defense IT Contract

A federal judge has placed a temporary block on the US Department of Defense JEDI cloud contract awarded to Microsoft in October 2019. The JEDI contract to consolidate 500 ongoing DOD cloud initiatives is worth up to $10 billion over 10 years. The block was ordered in response to a suit filed by e-commerce and cloud computing giant Amazon. Amazon Web Services, the cloud computing division of Amazon, had filed a formal motion asking the court to pause Microsoft's work on the JEDI cloud contract, claiming the evaluation process for awarding the contract included "clear deficiencies, errors and unmistakable bias." Amazon has said that that the awarding of the contract to Microsoft was driven in part by President Trump's bias against Amazon.

Industry Terms

ERP

Enterprise Resource Planning, management information systems that integrate information from multiple areas of client operations, including planning, purchasing, inventory, sales, marketing, finance and human resources

GWACS

Government Wide Acquisition Contracts, IDIQ contracts that are awarded to more than one of a pre-selected group of vendors

IaaS

Infrastructure as a service, IT resources, storage, and networking capabilities are owned and hosted by a service provider and offered to customers on-demand

IDIQ

Indefinite Delivery/Indefinite Quantity, contracts that provide for an indefinite quantity of services for a fixed time

Multiple-Element Arrangements

Contract that includes any combination of software, hardware, or services and involve deliverables and tangible products provided at different points in time.

Pay-per-Use

Business model that involves paying a small subscription fee on a per usage basis versus paying a standard licensing fee for software

Percentage of Completion

Accounting method that recognizes revenues and expenses of long-term contracts yearly as a percentage of the work completed during that year

SaaS

Software as a Service, software licensing and delivery model in which software is licensed on a subscription basis and is centrally hosted

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