decide

THE IT AND SOFTWARE JOB MARKET IN HOUSTON

Recovery Edition
September 2020

- What the IT and Software Job Market Looks Like in Houston
- What Skills Are in Demand
- What's Next for Your Career
- Who is Hiring

ABOUT THIS GUIDE

At Decide Consulting we collect a lot of data for our own market intelligence. We pull data from the **Bureau of Labor Statistics**, job board surveys, public APIs, our own surveys, and technical social media. Much of that data is used in this book. It paints a picture of the current state of the information technology and software **job market**, where it is going and what to expect.

For IT and Software Workers, this guide will give you understanding about:

▶ What skills are in demand
▶ Ways to get those skills
▶ Companies that are expected to be in **growth mode**
▶ What to expect as we emerge from this COVID shutdown

For IT Employers, this guide will help you with:

▶ Understanding how technology can help you grow revenue
▶ Knowing how to attract the top technical talent
▶ What the top technical skills will be in a **Post-COVID** world
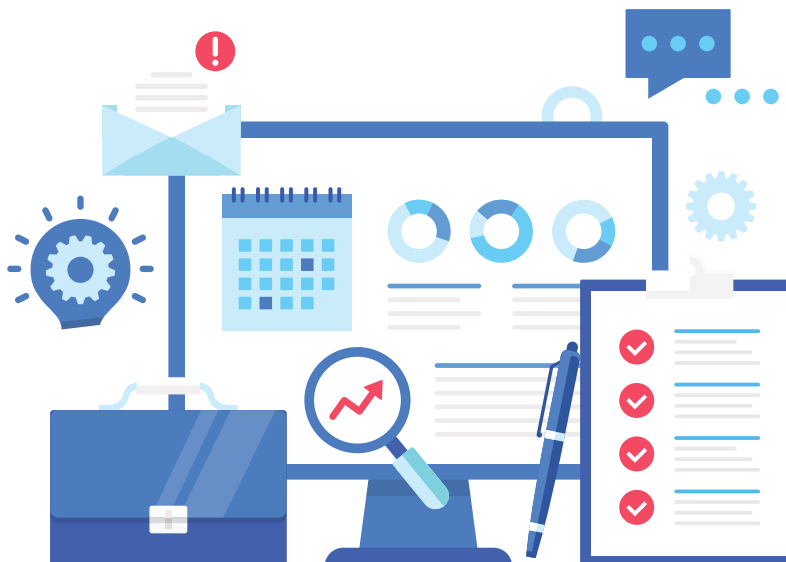
HOW MANY PEOPLE WORK IN
IT AND SOFTWARE IN THE US*?

September	2018	5,028,000
October	2018	5,135,000
November	2018	5,202,000
December	2018	5,184,000
January	2019	5,139,000
February	2019	5,392,000
March	2019	5,237,000
April	2019	5,175,000
May	2019	5,308,000
June	2019	5,443,000
July	2019	5,578,000
August	2019	5,562,000

| September	2019	5,421,000
October	2019	5,423,000
November	2019	5,259,000
December	2019	5,262,000
January	2020	5,632,000
February	2020	5,672,000
March	2020	5,653,000
April	2020	5,735,000
May	2020	5,763,000
June	2020	5,990,000
July	2020	5,856,000
Aug	2020	5,533,000

Even with job losses through APRIL, the are still 682,000 more people working in IT AND SOFTWARE than 2 years earlier. That is a 13.5% Gain in TWO YEARS.

Every month the Bureau of Labor Statistics publishes employment numbers. Each month Decide digs into the BLS numbers a bit more and pulls out the data relating to Information Technology and Software. We create a monthly report based on this data. While the monthly IT and software jobs reported each month is based on the BLS statistical modeling, it does provide an accurate reflection to the direction of job gains.

Source: Bureau of Labor Statistics

IT AND SOFTWARE JOBS POSTED IN HOUSTON
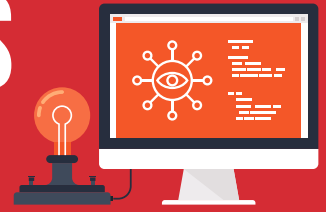
At Decide Consulting, we pull all the jobs posted on well-known job boards. These include jobs posted by recruiting firms, consulting companies and origin companies. We define an origin company as any company NOT in the business of recruiting or providing information technology services. Think of an origin company as Exxon or Chase.

During the COVID shutdown, we published a daily listing of all these jobs on our site as a public service. We felt it was more important to help the community than to hold onto these for ourselves.

Week Ending	# Jobs Posted	Week Ending	# Jobs Posted	Week Ending	# Jobs Posted
2/4/2020	1103	4/14/2020	416	6/23/2020	667
2/11/2020	1201	4/21/2020	421	6/30/2020	874
2/18/2020	1156	4/28/2020	342	7/7/2020	1064
2/25/2020	1098	5/5/2020	344	7/14/2020	843
3/3/2020	1080	5/12/2020	533	7/21/2020	974
3/10/2020	1102	5/19/2020	558	7/28/2020	1170
3/18/2020	847	5/26/2020	536	8/4/2020	906
3/25/2020	877	6/2/2020	482	8/11/2020	705
3/31/2020	643	6/9/2020	463	8/18/2020	1167
4/7/2020	369	6/16/2020	597	8/25/2020	1157

There is some seasonality to the job posting cycle, but it's not complicated. The rate of job posting slows down in June and July when many people are on vacation. Waiting for the CFO to come back from Cancun to sign off on the budget is a regular occurrence.
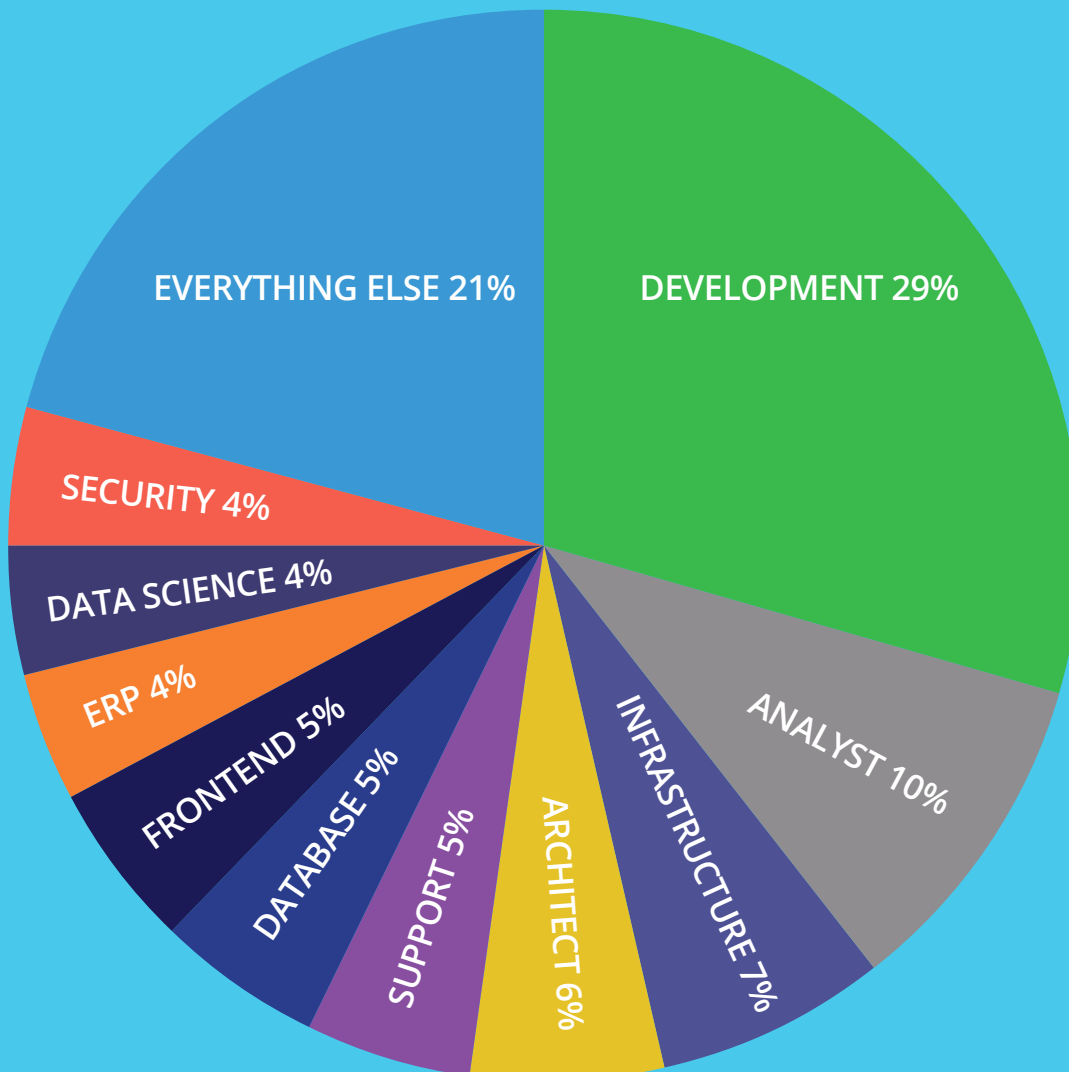
For the same reason, December is another slow month, while April and October tend to be the busiest months for job postings. Our pre-COVID expectation was to see over 1300 jobs posted each week in April. Instead, this was the number we saw posted over the entire month.
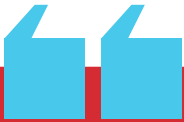
BREAKOUT OF HOUSTON POSTED IT AND SOFTWARE JOBS

EVERYTHING ELSE 21%

DEVELOPMENT 29%

SECURITY 4%

DATA SCIENCE 4%

ERP 4%

FRONTEND 5%

DATABASE 5%

SUPPORT 5%

ARCHITECT 6%

INFRASTRUCTURE 7%

ANALYST 10%

Top Development Job Titles
Software Engineer
.Net Developer
Java Developer
Full Stack Developer
Python Developer

Top Analyst Job Titles
Business Analyst
Business Systems Analyst
IT Business Analyst
Systems Analyst
Application Analyst

Top Architect Job Titles
Solutions Architect
Software Architect
Azure Architect
AWS Architect
Big Data Architect

Top Data Science Job Titles
Data Engineer
Data Scientist
ETL Developer
Business Intelligence Analyst
Machine Learning Engineer

WHAT JOBS ARE COMING – DIGITAL TRANSFORMATION

The companies that have done well during the COVID shutdown are the ones who have invested in **Digital Transformation**. What is Digital Transformation? Digital transformation can be a catch-all phrase and is often overused today. Let's nail down what it means with some examples.

On one end of the spectrum is Amazon with everything from drone deliveries and AWS powering the entire operation. On the other end is your local restaurant that offered online ordering with delivery. Both of these operations were able to remain sustainable, or even grow, during the COVID lockdown.

If you thought you heard the term 'Digital Transformation' a lot before COVID, get ready to hear it even more afterwards. Read any briefing by McKinsey, Bain, or Gartner and you'll see the importance they assign to digital transformation.

What does this mean for the everyday technology professional? Focus on jobs that have any of these as part of their skills package:

▶ Cloud	▶ IoT	▶ Data Analytics
▶ DevOps	▶ Agile	▶ Robotics
▶ Automation	▶ AI /ML	▶ Mobile
▶ AR/VR	▶ CyberSecurity	▶ Blockchain
▶ 5G	▶ Business Continuity	▶ Last-Mile Implementation

> **The secret of change is to focus all of your energy, not on fighting the old, but on building the new.**
> - *Socrates*

These job descriptions will include technical skills such as:

- AWS, Azure, GCP

- Python, R, PyTorch, Scala, Django

- C#, .NET Core, RESTful API

- Tensorflow, ML.NET, Keras, Spacy, NLP

- Recommender systems, Time series analysis, Bayesian inference

- SQL, NoSQL, Hadoop, Spark, Hive, MapReduce

- Kubernetes, Docker, Ansible, Puppet, Jenkins

- VMWare, Hyper, PowerCLI, Onyx, ESXTOP, HCI Bench

- Palo Alto, Fortinet, Cisco, Aruba

- Git, Jira, Confluence, Stash

- Java, Spring, Kafka, JPA

- iOS, Android SDK, Kotlin, Swift

- React, Angular, Vue, Node, Svelte, Javascript

- CISSP, CEH, OSCP, CISA, GCIH

- oWASP, GWEB, GSSP

« **15 years of behavior change in 30 days**

– Joe Galvan - Vistage
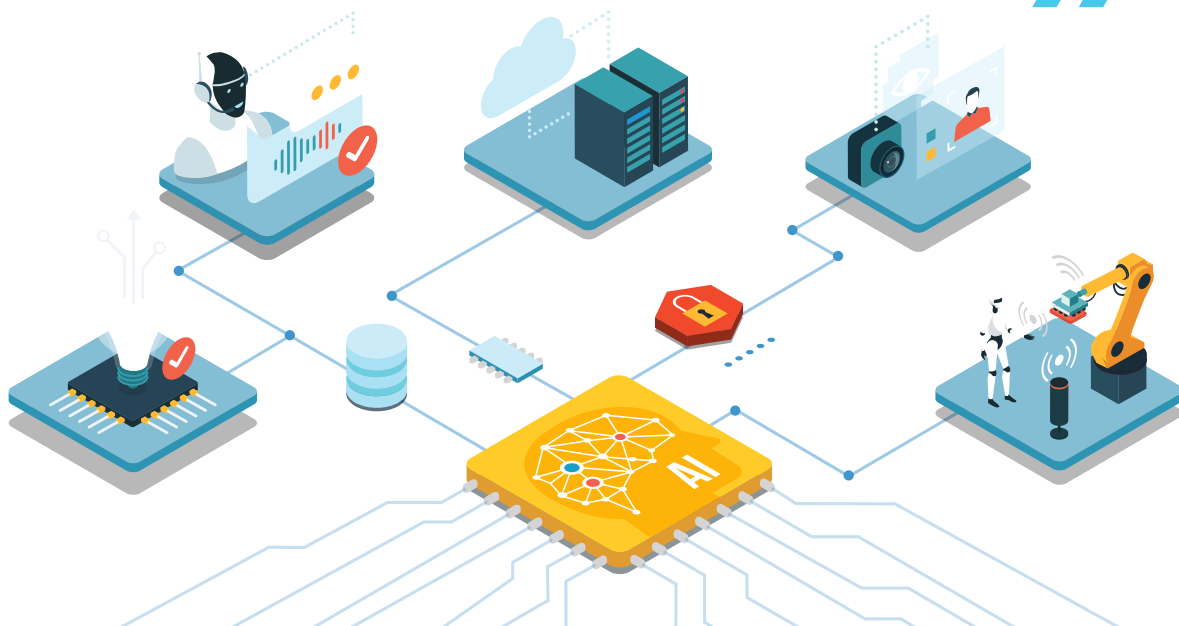
WHO WILL BE HIRING?

One sector of companies will do very well in the COVID recovery: **Big 4 Consulting** firms and their direct competitors. When the Fortune 1000 wants to expand Agile or move to DevOps, these are the companies that typically get involved.

These companies are highly selective for many roles. Any client-facing employee needs to have the "consulting gene" and an acceptable academic pedigree. They like to hire from each other, because this raises the odds of a new hire having the "consulting gene." There's still plenty of room at these companies for the tech-heavy roles.

A.T. Kearney	Ernst & Young	PA Consulting
Burwood Group	Sikich	Alvarez & Marsal
Kable	Avasant	Deloitte
Accenture	Gartner	Perficient
Capgemini	Slalom Consulting	Aon Hewitt
KPMG	BearingPoint	DXC Technologies
Aecus	Grant Thornton	PWC
Cognizant	Tata Consultancy	Arthur D. Little
McKinsey	Booz Allen Hamilton	DynTek
Agile IT	HPE / DXC	Sapient Consulting
Crayon Software	Vology	Avanade
Mercer	Boston Consulting Group	Cyclotron
AlixPartners	IBM	WGroup

> **Today is the slowest rate of change we will ever experience**
>
> – *Jack Uldrich*

REMOTE WORK WAS TRENDING BEFORE COVID

Since 2018, IT and software recruiters have been hearing more and more candidates say they want to **work remotely**. Over the last few years, it was not uncommon for an IT worker to ONLY consider remote options for their next assignment. Although IT workers have been requesting remote work for longer than that, it was really beginning to pick up steam in 2018 – 2019.

If you're a **Python/Hadoop developer** or a **DevOps engineer**, you're in **high demand**. It's not uncommon to hear from multiple recruiters every week. Switch your LinkedIn profile to **"open to new opportunities"** and you'll hear from even more recruiters. Pre-COVID, the unemployment rate for IT and software workers was hovering around 2%.

Heading into 2020, these same in-demand workers had all done at least one remote assignment... and liked it. Can you blame them? They still accomplished the same goals and objectives—yet got more time with their families and didn't have to sit in traffic or step onto a plane.

Regardless, recruiters still struggled to explain to employers why they should consider changing their **come-to-the-office job** to a **remote one**. The employers were concerned about opening the **work-from-home floodgates**. Productivity was a concern. But that **Python developer** was in such high demand that she just had to wait for one potential employer to change their mind. It always happened.

In the **post-COVID economy**, the work-from-home model has fully arrived. We see study after study saying how worker productivity has increased. Candidates and employers should be better matched moving forward.

> **I don't think we will ever go sit in a doctor's waiting room when we're sick again. We will use telemedicine. The technology that's available will change health care, will change education, will change a lot of things. And I think 5G is going to fuel that.**
>
> *Tami Erwin – CEO of Verizon*

TECHNOLOGY TRENDS TO GET USED TO IN THE POST-COVID ECONOMY

▶ **Robot Deliveries** - Kroger has stepped up its plans for deliveries via autonomous vehicles.

▶ **Contactless Payment** - More people will use store-specific apps and Apple Pay

▶ **Remote Work** See our breakout on how this was already trending. Employers are now on board.

▶ **Distance Learning** - Schools and universities are recalibrating how they deliver education. Maybe Harvard will soon admit more than 1,950 students per year.

▶ **Telemedicine** - Telemedicine visits have skyrocketed since the COVID shutdown. Is that CPT Code 99201-E?

▶ **3D Printing** - Do you want to get your supply chain from China or do you want to 3D-Print it here?

▶ **5G** Everything mentioned above needs more data than 4G can provide.

▶ **eSports** - While regular sports are shut down, eSports thrive in an online environment

> **The University of Missouri Overwatch team, which recently won the 2020 NACE championship (NACE is the equivalent of the NCAA for collegiate eSports), offers its players a big benefit: UM awards scholarships to its eSports players. Yes, college money for playing video games.**
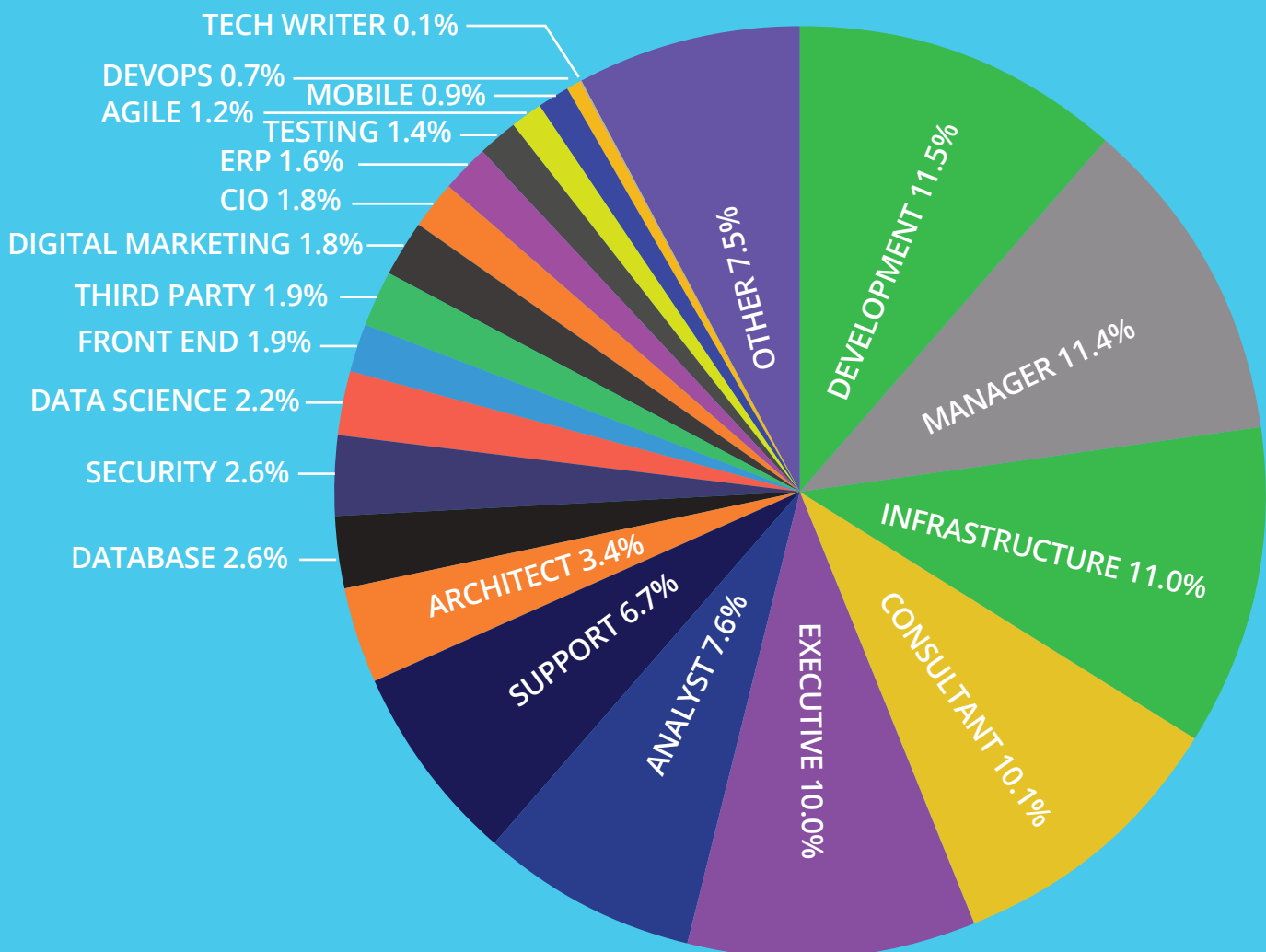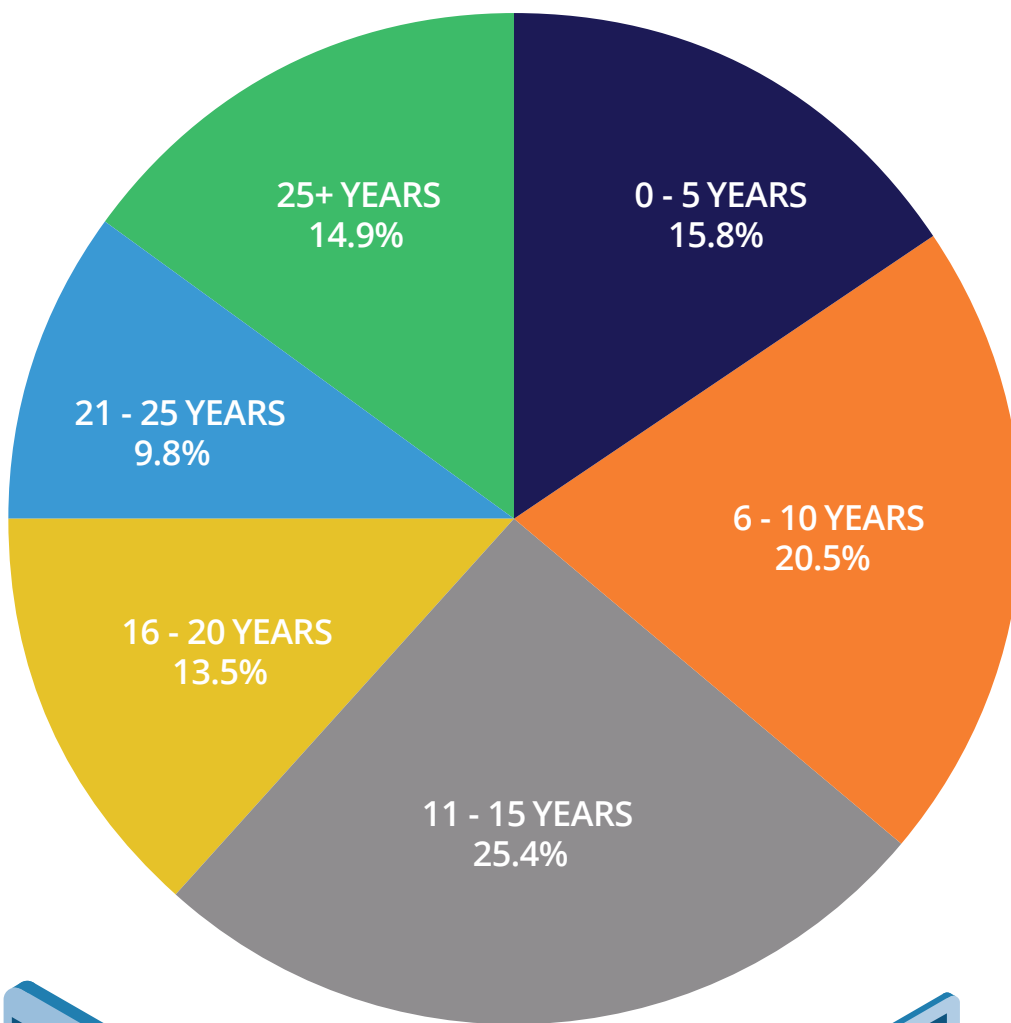
HOW BIG IS THE HOUSTON IT AND SOFTWARE MARKET?
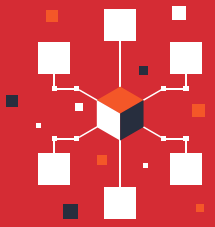
From our January 2020 data, there are just over **110,000** individuals in the Houston metro area that work in IT and software. This makes up 3.2% of the Houston metro area workforce.

Nationwide, the IT and software make up about 2.9% of the workforce. Most IT and Software jobs are in metro areas, so Houston's tech population will exceed that.

Here is how Houston's IT and Software market breaks out by Skills

TECH WRITER 0.1%
DEVOPS 0.7%
AGILE 1.2%
MOBILE 0.9%
TESTING 1.4%
ERP 1.6%
CIO 1.8%
DIGITAL MARKETING 1.8%
THIRD PARTY 1.9%
FRONT END 1.9%
DATA SCIENCE 2.2%
SECURITY 2.6%
DATABASE 2.6%
ARCHITECT 3.4%
SUPPORT 6.7%
ANALYST 7.6%
EXECUTIVE 10.0%
CONSULTANT 10.1%
INFRASTRUCTURE 11.0%
MANAGER 11.4%
DEVELOPMENT 11.5%
OTHER 7.5%

EXPERIENCE BREAK OUT OF HOUSTON IT AND SOFTWARE MARKET

Pie chart:
- 0 - 5 YEARS: 15.8%
- 6 - 10 YEARS: 20.5%
- 11 - 15 YEARS: 25.4%
- 16 - 20 YEARS: 13.5%
- 21 - 25 YEARS: 9.8%
- 25+ YEARS: 14.9%

OTHER INTERESTING HOUSTON IT & SOFTWARE MARKET FACTS

Total Workforce	Analyst	Infrastructure
Female - 21.2%	Female - 37.1%	Female - 11.5%
Male - 78.8%	Male - 62.9%	Male - 11.5%

▶ Average Job Tenure – 47 Months
▶ Went to a Texas University – 24,309
▶ Went to a University Overseas – 14,543
▶ Have a Graduate Degree - 32,067
▶ Percentage of Data Science Workers with a Graduate Degree – 55.7%
▶ Percentage of Helpdesk/Support Workers with a Graduate Degree – 15.6%
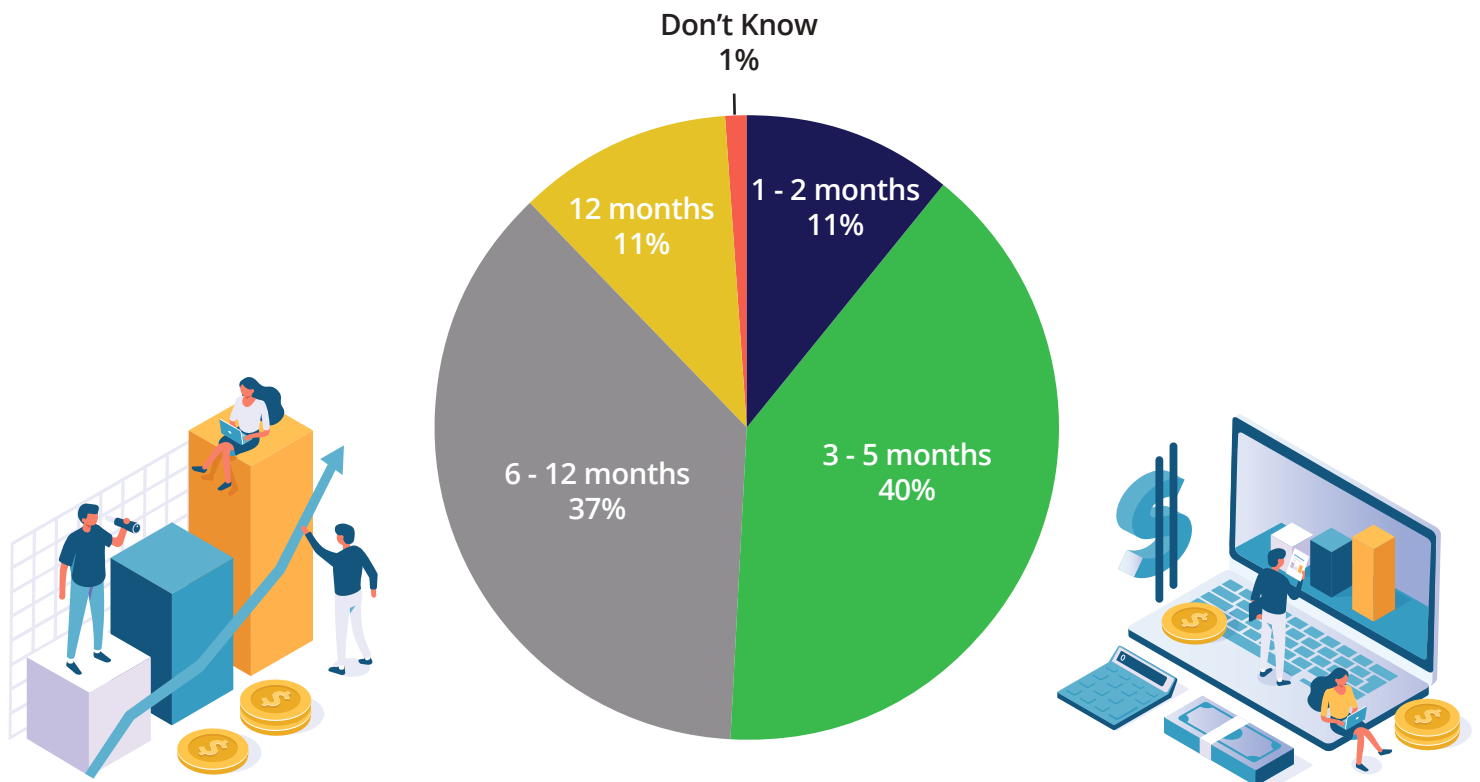▶ Number of Job Hoppers (last 3 jobs each less than 18 months) – 17,154

> **We always overestimate the change that will occur in the next two years and underestimate the change that will occur in the next ten.**
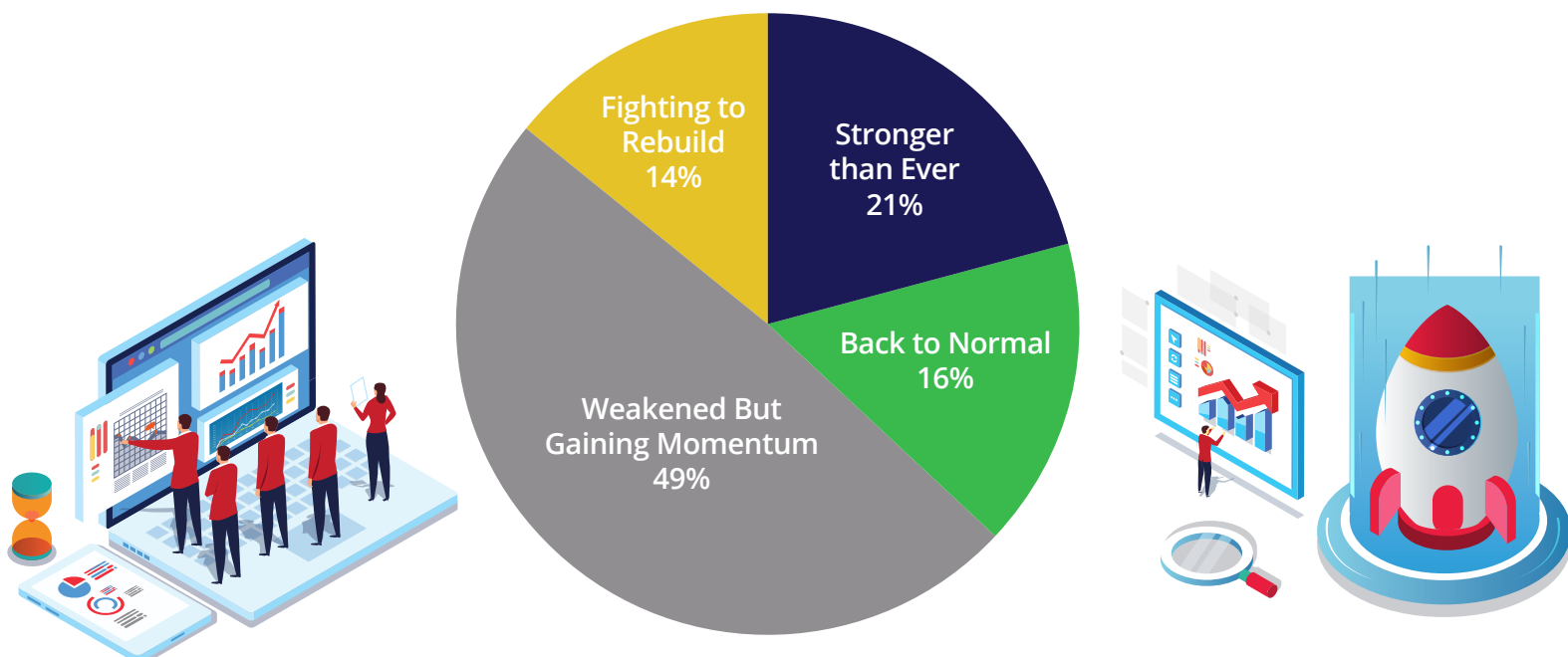>
> *- Bill Gates*

SMB CEO EXPECTATIONS OF WHEN WE WILL SEE ECONOMIC IMPROVEMENT

Don't Know
1%

1 - 2 months
11%

3 - 5 months
40%

6 - 12 months
37%

12 months
11%

SMB CEO EXPECTATIONS OF THEIR OWN BUSINESS IN 6 MONTHS

Fighting to Rebuild
14%

Stronger than Ever
21%

Back to Normal
16%

Weakened But Gaining Momentum
49%

Source: Vistage International

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CAREER ADVICE TO RECENT GRADUATES
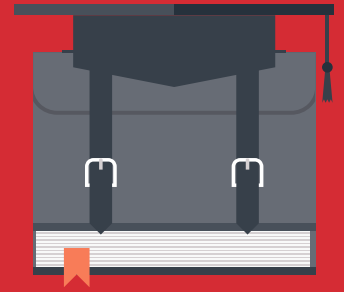
▶ **GRAD SCHOOL** – If grad school was a possibility for you, now is the time to make it happen. There is no better time to be in school than when the economy is in the tank. Focus on a **STEM degree** and in two years your job prospects will be much better.

▶ **Not in IT?** – You should consider it. IT and software will continue to have higher job growth and better pay than most other segments.

How to Get into Information Technology

▶ **Nano Degrees** – Sites like **Coursera** and **Udacity** offer certificates you can complete in 3-6 months for about $2000. You can focus on Data Science, Digital Marketing, Python and many others.

▶ **Coding Bootcamps** – There are several private bootcamp locations in every major city. Iron Yard, Hack Reactor and Digital Crafts are a few well-known ones. These are immersive programs that boast high rates of employment for graduates.

▶ **University Extensions** – These are immersive programs like the **bootcamps**, but are associated with universities like Texas, Texas A&M and Rice. It is common to see 12-24 week programs that cost around $8500.

▶ **Not Sure Which Direction** – Not sure if you should focus on - Cybersecurity or Data Science or Development. Take the **FREE classes** There are plenty of good options. **Udacity** and **Coursera** offer several free introductory courses. Google even allows people to take their AI course for free.
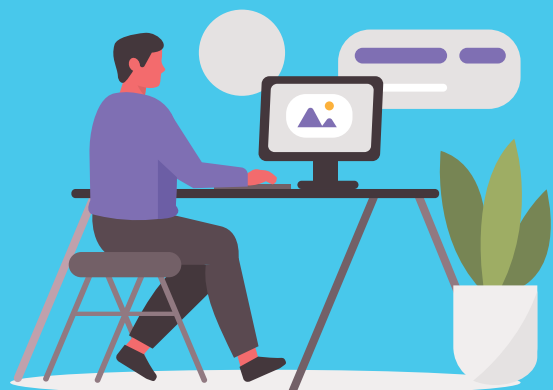
CAREER ADVICE TO MID-CAREER PROFESSIONALS

Many people are finding themselves in the job market now despite 8-12 years of experience because of COVID and/or **Oil Prices**. These individuals have some different criteria.

▶ **Oil & Gas** – While Houston is relatively diversified, it is still oil and gas–centric. A lot of good talent were laid off in 2014 when prices dropped, and now there's COVID. When WTI is riding high, there are a lot of good-paying jobs. Every time an OPEC country feels like they need to make a statement, people in Houston lose their jobs. Working in IT gives one the ability to cross industries easier. This might be a time to ask yourself if you want to stay in O&G.

▶ **How Technical are You** – If you have kept your hands in technology, it is a good time to focus on technology under the digital transformation umbrella – DevOps, data engineering, microservices, security, AI/ML, Azure/AWS/GCP and full stack are all good options.

▶ **Less Technical** - If you've been less technically-focused, consider learning low-code and automation tools. Power Apps, Zapier, Betty Blocks and Trey.io are some good options. SMBs need to digitally transform also. These tools allow a company to do a lot of automation very quickly and cheaply. These tools are intended to be used by **non-developers**, but the more technically inclined will fare better with them.

▶ **Education is Still Good** – Consider the same education advice we gave to new grads. If you still have 30 years left in your career, it could be a good time to invest in yourself.

> There will be interruptions, and I don't know when they will occur, and I don't how deep they will occur, I do know they will occur from time to time, and I also know that we'll come out better on the other end
>
> *Warren Buffet*

CAREER ADVICE TO THE EXPERIENCED

If you have **18+ years' work experience** and find yourself out of work, you have a different set of things to consider in addition to the same advice to those at mid-career.

▶ **How Technical Are You?** – Someone mid-career taking a step back and learning **Angular** or **React** is one thing. Doing it after many years' experience is another. Many politicians have floated the idea of taking people who have never been technical, or not technical in the last ten years, and teaching them how to code. The market has been less than receptive of those individuals.

▶ **Use Your Strengths** – If you have been doing project management for several years, consider getting a certified as a Scrum Master, SAFe or PMP. If you have been an Analyst involved in release management, consider get a DevOps Leader (DOL) certification or Certified Agile Process Owner (CAPO) certification. If you have an expired MSCE, renew it and get the **Data Management** and **Analytics** portion of it. Whatever the new technology is, there will be a need to have a "grown-up in the room," and there's typically a certification to go along with that.

▶ **If You are Still Working, But Nervous** - Volunteer for that new technology project. Large companies are still doing the equivalent of 'Hello World' when it comes to **AI/ML**. If you have been with a company for 20 years, you have the advantage of knowing where all the data is—and which is the good data. **AI/ML** is useless without the proper datasets to learn from.

▶ **Have Multiple Versions of Your Resume** – Have a version that emphasizes your **project management experience**. Another that emphasizes a specific technology. Maybe a third that focuses on vertical experience. When you interview, you already cater your answers to the job you're applying for. Why not do the same with your resume?
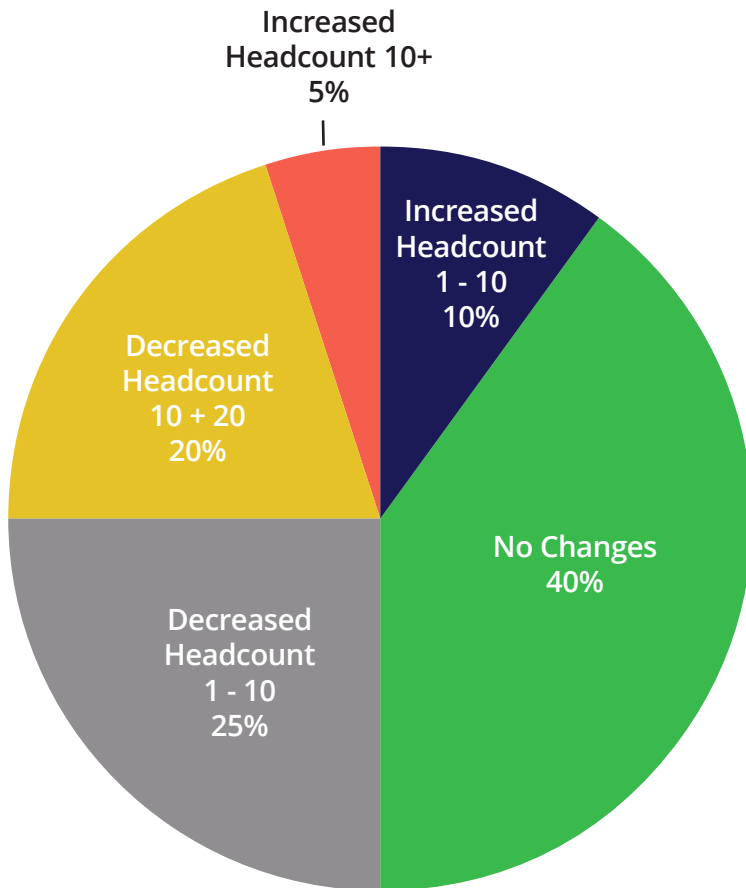
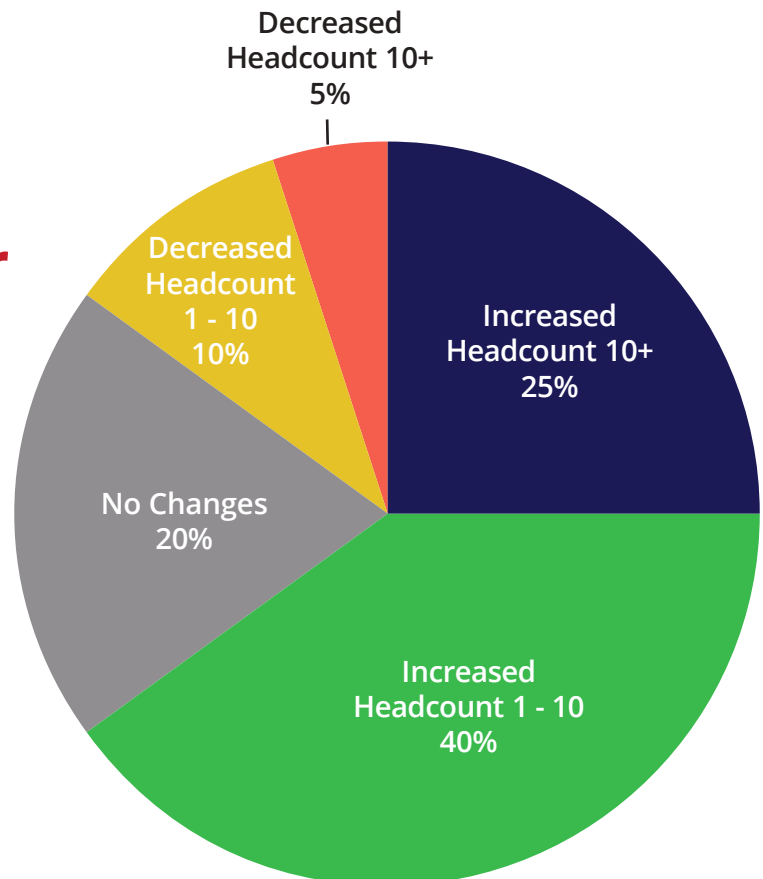« **Life doesn't get easier or more forgiving, we get stronger and more resilient.**
Steve Maraboli »

RESULTS OF HOUSTON SURVEY OF IT MANAGERS / DIRECTORS

How has your IT Headcount been affected by COVID:

Pie chart 1:
- Increased Headcount 10+ 5%
- Increased Headcount 1 - 10 10%
- No Changes 40%
- Decreased Headcount 1 - 10 25%
- Decreased Headcount 10 + 20 20%

How do you expect your IT headcount to change when recovery starts?

Pie chart 2:
- Decreased Headcount 10+ 5%
- Increased Headcount 10+ 25%
- Increased Headcount 1 - 10 40%
- No Changes 20%
- Decreased Headcount 1 - 10 10%

HOUSTON IT MANAGERS AND THEIR PROJECTS

	Companies with projects Pre-COVID	Companies Planning During Recovery
Anything Letter + aaS	40%	65%
Cloud	50%	85%
IoT	25%	50%
Data Analytics	60%	75%
DevOps	40%	70%
Agile	75%	90%
Robotics	15%	25%
Automation	50%	90%
AI/ML	15%	80%
Mobile	75%	85%
AR/VR	5%	15%
CyberSecurity	90%	100%
Blockchain	10%	25%
5G	15%	55%

UNANSWERED QUESTIONS TO GET TO A BETTER NORMAL

▶ Will our collective thinking about healthcare change like our feelings about security did after **9/11**?

▶ What will we think about paying for the cost of stimulus packages on top of an already massive debt?

▶ Is a **near-zero infection rate** even a possibility? If not, how does the economy work?

▶ Will we think differently about globalization when supply chains and critical components reside outside any country's influence — and will we consider it worth the cost to "build our own"?

▶ As **supply chains are pulled from China**, as expected, will thy move to the back to the US or to other countries like Mexico or India?

▶ How will public transportation that historically has people packed should-to-shoulder react to prevent case spikes?

▶ On a math test, 90% is good for most of us. **An economy at 90%** is not. While getting back to 90% is better than the lockdown, we will be at a 90% economy for a while. What does 10% of the economy not working for the next 2 years look like?

▶ Pre-COVID, 70% of our economy was based on consumer spending. Can we or will we return to that?

▶ Can the Fed control inflation long term after pumping in $2.3 trillion to date?

▶ Will we finally get the **infrastructure spending** that both parties have spoken of in Washington but not brought up in committee?

▶ When Obama and McCain ran against each other in 2008, both campaigned on creating a national **healthcare database**. It did not happen. That would have been very handy during COVID. Will the idea be brought up again?

CONTACT US

DECIDE CONSULTING
11211 KATY FREEWAY
SUITE 680
HOUSTON, TX 77079

www.

WWW.DECIDECONSULTING.COM
SALES@DECIDECONSULTING.COM
RECRUITING@DECIDECONSULTING.COM

281.596.0123