Speech Recognition:
an essential tool for the
modern legal professional

Many law firms and corporate legal departments are rethinking their internal practices to stay competitive. Technology, digitalisation and, more specifically, speech recognition can assist in enabling firms to maintain a market leadership position and attract the best talent for their practice.

NUANCE

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Introduction

The time and cost involved in documenting case and client information, contracts, briefs and other legal materials is staggering. Traditional reliance on administrative support staff and outside transcription services drags down productivity and eats into profits.

The effect of legal documentation on staffing costs, productivity and billable hours

Many law firms and corporate legal departments are rethinking their internal practices to stay competitive. Considerations include:

– Reducing staffing and operational costs
– Enabling staff to be more productive and steering people towards more billable duties
– Freeing-up qualified staff to focus on work that leverages their valuable skill sets, rather than on menial tasks
– Speeding transcription turnaround times to eliminate bottlenecks that weigh down service.

This white paper discusses some of the legal profession's most pressing cost and productivity issues and how technology, digitalisation and more specifically, speech recognition can assist.

Imagine completing detailed briefs and contracts in a third of the time usually taken. Consider the efficiencies gained by using support staff to proofread documents instead of typing them from scratch. Or legal professionals completing documents while out of the office, either between meetings or on-site with clients.

These are simple changes that can efficiently reduce costs and improve a legal practice's efficiency.

Using the latest digital technologies can also raise the profile of a firm as a market leader and attract and retain the best employees.

46%

of legal sector workers believed digitisation would reduce operational costs.[1]

Digitalisation of the legal practice

The need to digitalise
While the legal sector is steeped in tradition, legal firms must adopt a digital strategy in order to avoid being left behind.

Australasian Lawyer states that many legal professionals in Australia want to digitise. In a study conducted by Nitro:[1]

– 40% of legal sector workers want to use more digital tools,
– 20% – half of whom held senior management roles – believed digitising processes would make them more productive and
– 46% believed digitisation would reduce operational costs.

1 www.thelawyermag.com/au/news/general/many-australian-legal-sector-workers-want-to-digitise-processes/204467
2 www.vmware.com/radius/digital-employee-experience-infographic/

Maintaining market leadership
Digital transformation is changing the way people work and legal firms that
stay up to date with current digital trends are more likely to attract and retain
the best talent for their organisation.

According to a study commissioned by VMware[2], organisations that
provide "[a] flexibility of tools (e.g., technology, apps, devices etc.)"
would influence a candidate's decision to apply for a position or accept
a company's offer of emploment. Employees are more likely to recommend
their company if it provides a great digital experience and the organisation
itself is more likely to be a market leader than competitors with more
traditional workplace facilities.

Few things have changed the practice of law in the past decade as much as
the advent of legal technology. In this whitepaper, we explore the effect of
one such technology, speech recognition.

Traditional legal methods vs. speech recognition

Law is a profession that has quickly adopted evolving speech technologies –
from shorthand, to wax cylinders, to analog tape, to digital recorders – because
it was accepted that dictating a document is a more efficient use of a
lawyer's time than having them type it.

Firms still often rely on expensive paralegals, legal secretaries, or outside
services to transcribe recordings of dictated documents including client
memos, contracts, motions, briefs, discovery and deposition summaries,
and more.

As lawyers became familiar with personal computers, there has been
growing acceptance that lawyers will type their own materials, usually
without any support staff.

There are therefore two general approaches to document preparation,
and as case volumes and administrative costs continue to increase, each
approach presents drawbacks:

Third-party transcription: A lawyer dictates into a telephone or digital
recorder, and the audio is sent to an outside transcriptionist; alternatively,
the recording may be sent to an in-house transcriptionist, secretary or
legal assistant. Outsourced transcription is simply too expensive and time
consuming, slowing down proceedings, impacting client satisfaction, and
cutting into profits. Although in-house transcription may be more cost-
efficient than outsourced efforts, there is still a lengthy and unproductive
back-and-forth of review cycles with support staff.

Direct input: The lawyer types the information themselves. Some individuals
can't type, or prefer not to, either because they are untrained as typists, have
a disability, or wish to prevent the development of a repetitive stress injury.
Firms and corporate departments with limited staff require attorneys to
create their own accurate documents under tight deadlines. This may even
be the case when an in-house transcription process is in place since many
solicitors work late into the night – long after support staff has gone home.
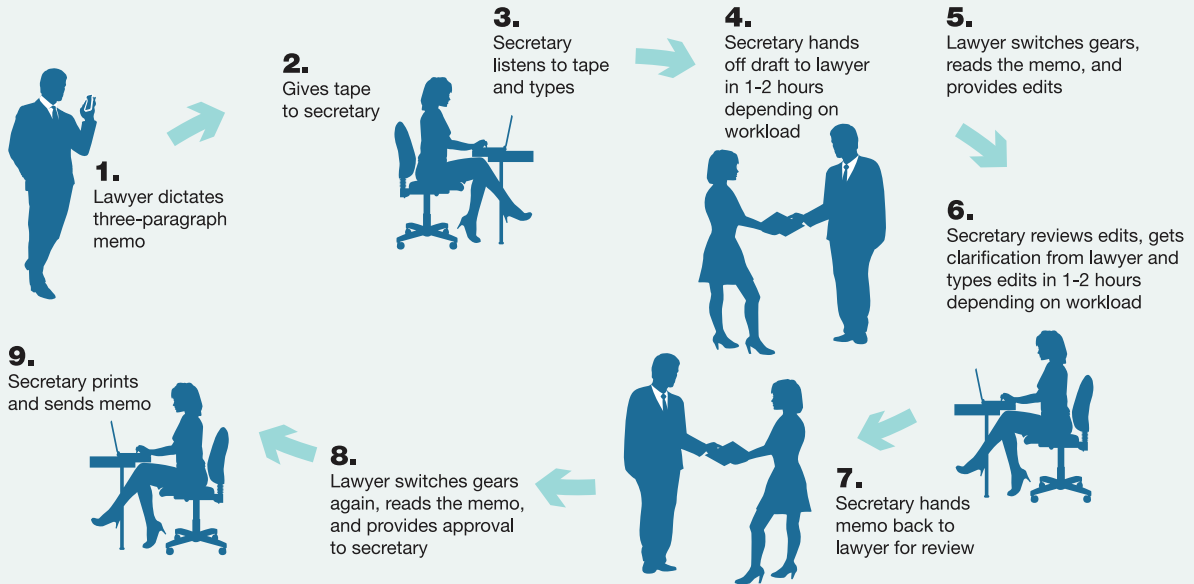See Fig.1.

73%
of employee and HR respondents
agree the flexibility of tools including
technology needed for work would
influence their decision to apply or
accept a company's position.[2]

75%
the percentage of time saved using
speech recognition versus traditional
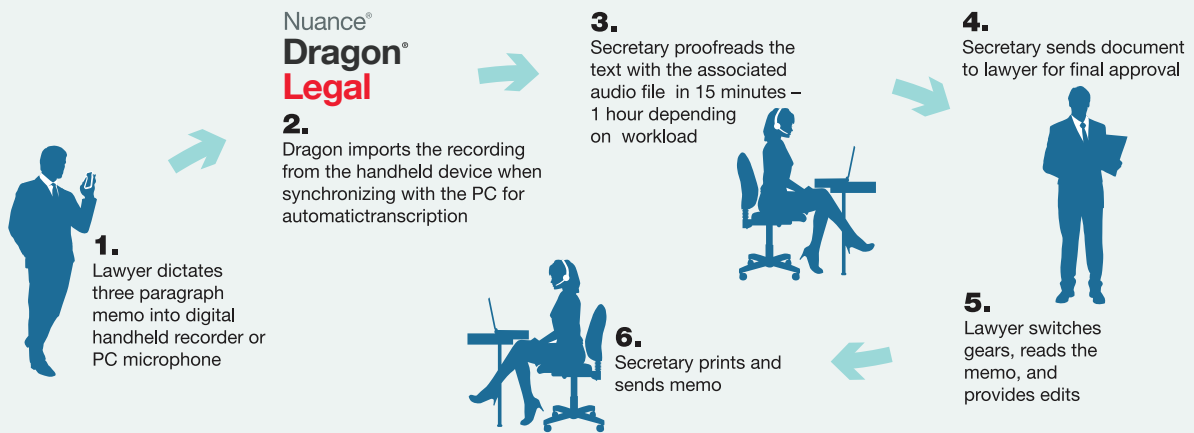methods.
See Fig.1

Using traditional transcription

1. Lawyer dictates three-paragraph memo

2. Gives tape to secretary

3. Secretary listens to tape and types

4. Secretary hands off draft to lawyer in 1-2 hours depending on workload

5. Lawyer switches gears, reads the memo, and provides edits

6. Secretary reviews edits, gets clarification from lawyer and types edits in 1-2 hours depending on workload

7. Secretary hands memo back to lawyer for review

8. Lawyer switches gears again, reads the memo, and provides approval to secretary

9. Secretary prints and sends memo

Total time: **2 – 6 hours** depending on workload

Using Nuance Dragon Legal with a handheld recording device

Nuance®
Dragon®
Legal

1. Lawyer dictates three paragraph memo into digital handheld recorder or PC microphone

2. Dragon imports the recording from the handheld device when synchronizing with the PC for automatictranscription

3. Secretary proofreads the text with the associated audio file in 15 minutes – 1 hour depending on workload

4. Secretary sends document to lawyer for final approval

5. Lawyer switches gears, reads the memo, and provides edits

6. Secretary prints and sends memo

Total time: **30 minutes – 1.5 hours** depending on workload

Further efficiency can be achieved by using **Dragon Legal** for direct input

Using Nuance Dragon Legal directly with your PC

Nuance®
Dragon®
Legal

1. Lawyer dictates three paragraph memo directly to PC using Nuance Dragon Legal with 99% accuracy. Proofreads & sends immediately to client or secretary.

2. (optional) Secretary prints and sends memo
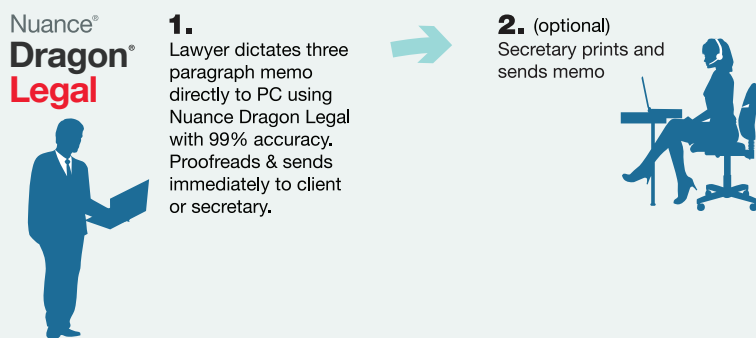
Total time: **10 – 30 minutes** depending on inclusion of support staff

Fig.1

How speech recognition can assist

Why speech?
Speech is the natural way for humans to communicate. We learn to speak without the years of education required for writing and reading.

Whilst most people now have at least rudimentary typing skills, most can't type faster than 40 words per minute (wpm) whereas we can speak three times faster at around 130 wpm. We can also read six times faster and listen 10 times faster than we can type. Typing holds us back.

In an ideal world, mainstream computer use would be speech-based. It's faster, more efficient, and convenient.

Differences between personal and speaker-independent speech recognition such as Siri
Speech recognition software that recognised "normal" continuous human speech and converted it to text was first commercially available in 1997.
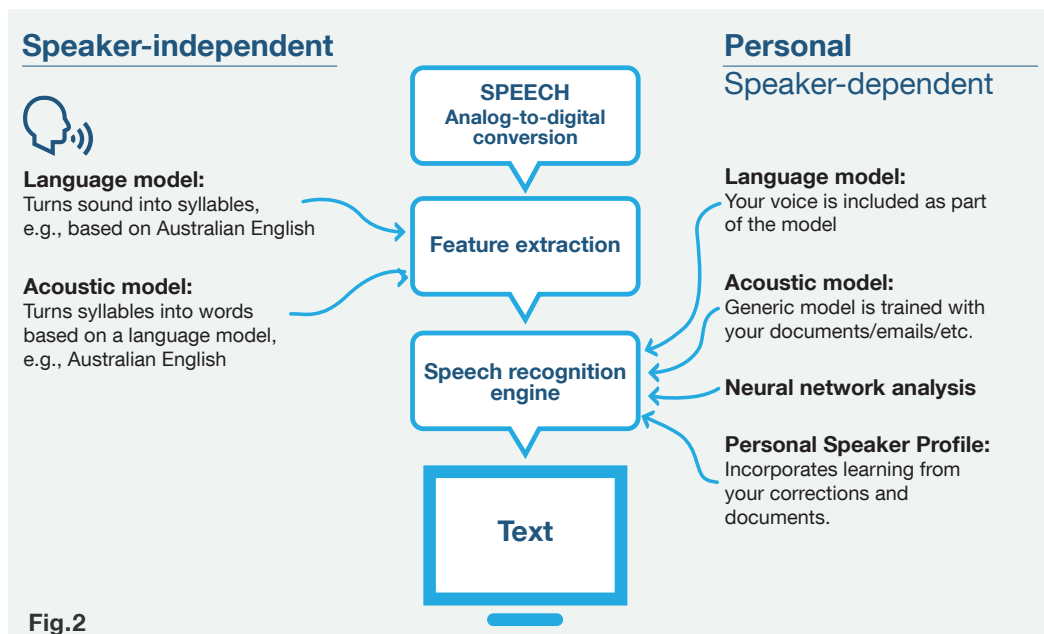
Apple's introduction of Siri in 2011 launched a wave of speech-driven user interfaces and excited public imagination again with the potential of SR technology. Google and Amazon arguably became the flag bearers for speech recognition (SR) flag bearers with their own speech-drive personal assistants.

SR is multiple technologies rather than a single solution. Speaker-dependent solutions are personal to each speaker. They adapt to each person's voice and language. Personal SR provides the highest accuracy for document creation. See Fig.2.

On the other hand, speaker-independent solutions use the same recognition technology for everyone. They are ideal for use in personal assistants and customer service environments where there are large numbers of calls from semi-anonymous clients.

In these non-personal systems, there is no guaranteed availability or professional support for business users, nor inclusions of specific legal terms and abbreviations. Integration into existing software environments or workflows is not always possible. Personal speech recognition software, on the other hand, can be expanded with existing subject-specific language packages, or can learn them very quickly.

130

average number of spoken words per minute by most people.

Differences between personal & speaker-independent speech recognition

Speaker-independent

Language model:
Turns sound into syllables, e.g., based on Australian English

Acoustic model:
Turns syllables into words based on a language model, e.g., Australian English

SPEECH
Analog-to-digital conversion

Feature extraction

Speech recognition engine

Text

Personal
Speaker-dependent

Language model:
Your voice is included as part of the model

Acoustic model:
Generic model is trained with your documents/emails/etc.

Neural network analysis

Personal Speaker Profile:
Incorporates learning from your corrections and documents.

Fig.2

Speech recognition for the legal sector

Thousands of legal professionals leverage speech recognition technology to dramatically reduce the time it takes to create everything from briefs and contracts to case documentation and correspondence.

Law firms and legal departments can deploy speech solutions broadly to speed document turnaround, reduce transcription costs, and streamline repetitive workflows – without having to change current business processes or existing information systems.

The benefits of legal speech recognition include:

– Speedy document creation: You can turn your voice into text with up to 99 percent accuracy using virtually any Windows-based application. Speech recognition delivers results three times faster than most people type.
– Eliminate document development bottlenecks: Streamline the editing and correction process with speech recognition to dramatically decrease turnaround time and reduce dependencies on support staff. Lawyers, legal secretaries and paralegals can become more productive if they're free to focus more on billable work.
– Increased efficiency and profitability: A law firm – large or small – can increase billings without increasing staff support costs, just as a corporate legal department can become more efficient and effective in their daily work.
– Increased revenue and improve service to customers without adding staff – Improve your firm's reputation.
– Reduced liability risks associated with inaccurate or incomplete documentation.
– Less administrative burden for your IT support people with a solution that is easy to deploy, maintain, and centrally manage.
– Improved competitive advantage by leveraging proven technologies that deliver a compelling ROI.

It's time to evaluate personal recognition – or re-evaluate it if it has been years since you last looked at it. Recent advances in both software and hardware means significant increases in performance, accuracy, and ease of use. With a next-generation speech engine leveraging deep learning technology, you can now dictate and transcribe faster and more accurately, and spend less time on documentation and more time on activities that boost the bottom line.

Speech recognition users include partners, associates, sole solicitors, corporate counsel, judges, legal researchers, court reporters, law students, paralegals, mobile professionals, people with disabilities, transcriptionists, assistants, and other support staff.

Personal speech recognition such as **Dragon** not only reduces the burden of document challenges on a practice or law firm, it also reduces the risks to the business. This in turn, allows a greater capacity to focus on both customers and core business activities.

Speech recognition can also reduce the risk of musculoskeletal disorders (MSDs) in the workplace which pose a potential cost the organisation. See Fig.3.

Bob Kohn, a managing partner at Bromberg and Sunstein, a law firm in Boston, initially started using SR after a repetitive stress injury made typing too painful. Upon seeing the immediate productivity gains Bob was realising, other lawyers within the firm started using Dragon, too. By allowing attorneys to dictate their own documents, emails and memos — day or night — SR has saved the firm tens of thousands of dollars in administrative overtime while improving service to clients.

99%

recognition accuracy achieved by personal speech recognition systems designed for writing.

Documentation challenges	Risks to business	Personal Speech Recognition implemented
Multitude of reports, meeting notes, emails, forms and more	More time spent on administration and less time on customers and clients	Increase in customer focused/ core business activity
Staff working overtime to manage workload	Staff retention and risk of MSD related claims	Documentation time reduced by up to 33%
		Reduced risk of MSD claims & potential costs to business
Administration is done in a timely manner to ensure accuracy	Inaccurate documentation leading to governance & compliance concerns	Reduced costs for overtime
		Reduced risk of compliance with more accurate documentation
		Transcription costs reduced or removed
Need for costly transcription services	Increased overheads	Staff fulfilment & greater retention
		Support staff with workplace injuries, visual impairment or language disabilities

Fig.3

Accuracy

Speech recognition solutions, such as Dragon from Nuance, designed for writing can be much more accurate than general systems for two reasons:

1. Greater than 99% recognition accuracy is achieved because Dragon maintains a profile for each user. The profile maintains information about what the speaker sounds like as well as information about the language they use in their documents. Details of vocabulary (words, phrases, and acronyms) used by the speaker as well as statistical information about which words are used together can be stored.

2. These systems learn. If recognition errors are corrected when they are made, Dragon can be more accurate in the future. A user's profile can be trained on documents and emails at regular intervals to adapt to changes in matters' terminology and new cases. For example, a new mining case might require recognition of a range of unusual place names. These words may be imported into Dragon vocabulary and shared across the organisation.

Dragon offers up to 99 percent accuracy right out of the box. Using specialty vocabularies can heighten accuracy even further. Dragon Legal includes a legal vocabulary – incorporating legal terminology, names of legislation, and abbreviations in addition to the standard business vocabulary.

" With each new generation of the software [Dragon speech recognition software], something gets better. It's such that now, its about 98% accurate in my dictation."

The Hon Michael Kirby AC CMG

Every law firm uses specific names, terminology, acronyms, or other vocabulary unique to its specialty or its client base. These unique terms are frequently used in court papers, correspondence, and other legal documents. To boost accuracy and further speed document turnaround, speech recognition software also allows legal professionals (or those who work with them, such as assistants, IT administrators, or trainers) to:

– Add new words or customise the vocabulary with employee names, acronyms, and specialised terminology frequently used in their firm or department
– Delete entries that are acoustically ambiguous (such as competing spellings)
– Indicate precisely how items should be capitalised and formatted, including alternate written forms for various contexts
– Analyse an individual's written documents to update the user profile based on writing style and words used

If a firm uses proper names or terminology with a high degree of frequency, customising the vocabulary across the entire organisation can increase recognition accuracy so users and their support staff spend less time correcting errors.

Dragon can make "smart" choices on spelling, capitalisation, and more by adapting to context. Law firms can customise vocabularies to increase recognition accuracy rates. As a result, users spend less time correcting errors. Users can customise "spoken forms" to yield specific written forms of words and phrases, such as "versus" to appear as "vs." or "figure" to appear as "Fig." Or perhaps a key contact at a practice's top client is named John Shaffer. The firm may want to consider deleting the other common spellings of the name Shaffer (Schaeffer, Schaefer, Shafer, etc). This way, the system will choose the intended spelling for more accurate dictation of correspondence and legal documents.

Workflow and content management

SR can be built into wider solutions or operated as a module in a wider workflow. The latter is more common as SR technology is mature and fit for purpose.

Prior to an SR deployment, organisations need to analyse where their documentation bottlenecks are occurring to determine whether and where SR can be of benefit. They then need to plan the integration points or processes that will be used to introduce SR into the organisation. Minimal process change is required, e.g., in a professional office where typing is being augmented with SR.

More complex planning will be needed if tasks are being redesigned for SR as might be the case in the elimination of a typing pool, external transcription, or introduction of a new mobile application.

" The hands-free aspect is also particularly useful when I'm drafting submissions and I'm trying to think and I tend to pace a lot."

Gus Hazel
James & Wells, New Zealand

" To be honest I initially didn't think it would be that useful for me. I did think that I was a pretty good typist. So I didn't expect that speech recognition would be better than my typing abilities, but I was happily proved wrong."

Joseph Garven
James & Wells, New Zealand

33%

amount of time saved completing documentation using a personal speech recognition system.
See Fig.3

Mobile legal documentation

For legal professionals, completing documents as soon as possible after an offsite meeting ensures richer and more accurate documentation.

Making cloud-based applications such as Dragon Anywhere Group from Nuance, a professional-grade mobile dictation solution, a part of your mobile documentation workflow enables legal professionals to take detailed notes of any length, or even fill out forms—all by voice—directly on their Apple or Android phone or tablet, in real time. For more accurate dictation and to meet business-specific needs, Dragon Anywhere Group can be customised with words such as legal terms, as well as custom commands to insert frequently used text or fillable forms. Customisations can be shared across a practice or the latest versions of Dragon Group desktop products, to provide consistent working environments.

" I am also able to use Dragon standing up or walking around the office. I use it in a range of different ways. I edit documents, also write more lengthy advices and letters to clients. Its also particularly helpful when I'm doing more simple things including writing emails or even drafting file notes."

Ashley Marsh
Commercial Lawyer
Bowden McCormack Lawyers & Advisers

Case Studies

The software is easy to use and for legal professionals used to dictation, it's a breeze. "Dragon voice recognition software is easy, comfortable and entirely natural. It has long allowed flowing dictation to be a reality in the legal profession, and I believe it is simply critical software for lawyers and an absolute must-have for any barrister" according to Mark Robinson, Senior Counsel at Maurice Byers Chambers in NSW.

Producing documents quickly and accurately is a key consideration for Richard Graham from Vogt Graham Lawyers, Perth. Richard mainly works on defamation, but also covers guardianship, administration and legal costs disputes and using Dragon has enabled him to deliver documents to clients with greater immediacy. The use of Dragon Anywhere provides him the capability of documenting while walking to court so he is never wasting time.

"If I were to put a guess, I would say its three or four times quicker than the alternative (typing)."

Richard Graham
Vogt Graham Lawyers

In addition, when clients produce a myriad of documents including court documents, correspondence and historical documents, it is sometimes the lawyer's responsibility to understand the chronological order of the events represented. With the use of a digital voice recorder and Dragon, dates can be transcribed and a simple sorting function within Microsoft Word produces a full chronological history within minutes instead of the arduous process of looking at the screen and typing details and then back to each reference document.

Return on Investment

In most cases, legal firms that purchase advanced speech recognition tools such as Dragon realise improved productivity and return on investment (ROI) almost immediately.

What makes rapid ROI possible?

It's easy to use

For a sophisticated tool, Dragon is remarkably easy to use —allowing most users to be up and running in less than 15 minutes — leading to high adoption rates with minimal training and support costs.

It saves time

Dragon enables users to create documents and emails three times faster than typing. Macros automate and streamline repetitive manual processes for productivity increases of up to 300%.

It's accurate

With recognition accuracy rates of up to 99%, Dragon allows users to quickly create detailed and accurate documents – without any spelling errors.

More information

Product information for individuals

Product information for practices/firms

Contact Us

About Nuance Communications, Inc.
Nuance Communications is reinventing the relationship between people and technology. Through its voice and language offerings, the company is creating a more human conversation with the many systems, devices, electronics, apps and services around us. Every day, millions of people and thousands of businesses experience Nuance through intelligent systems that can listen, understand, learn and adapt to your life and your work. For more information, please visit newzealand.nuance.com

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