

# IBM Watson Explorer Deep Analytics Edition

**Explore | Analyse | Advise**

*The power of machine learning with your information for better business outcomes*





Explore



Analyse



Advise

## Introduction

Successful organisations recognise that information is a strategic asset, capable of driving better decisions, improving efficiency, reducing risk and enabling better customer relationships. And yet most organisations struggle to provide employees from top management to frontline staff with the information, analytic insights, understanding and guidance they need for top performance.

With the tremendous surge in the volume and diversity of data, it is increasingly urgent for businesses to leverage information across the entire enterprise and beyond. In fact, most important decisions and insights require information from multiple systems. The IBM® Watson Explorer helps employees drill through unstructured data to find what they're looking for more quickly, combining information and analytics in context from many different sources in a single, unified information application.

IBM Watson Explorer enables you to connect employees and customers with the right information and insights at the right time. Watson Explorer Deep Analytics Edition provides these critical new features.

**Cognitive Miner:** Watson Explorer has an all-new intuitive user interface (UI) with a cognitive assistant that uses machine learning to show deep insight into both structured and unstructured data, helping you narrow your focus onto specific areas that may need more attention.

*IBM Watson Explorer Deep Analytics Edition features a cognitive assistant that combines content analytics and search with unique machine learning capabilities. This helps users quickly find and understand the insights they need to work more efficiently and make better, more confident decisions.*

**Machine Learning Models for Cognitive Advice:** Watson Explorer learns and interprets your data as it is exposed to it, looking at past behaviours to give you better recommendations and help you understand context.

**Application Programming Interface (API) Accessible:** Embed Watson Explorer into other applications to build scalable cognitive solutions to solve specific data problems.

**Flexible Deployment:** Watson Explorer is now a containerised application with a newly designed UI.

**Open Standards:** Watson Explorer offers complete flexibility when you choose your deployment environment, whether it's public, private, or hybrid cloud.

**Application Builder:** Watson Explorer allows you to create unified information displays that bring information, analytics and cognitive insights together.

Watson Explorer delivers these capabilities at the scale and speed required by today's ever-increasing data volumes, all while maintaining the security and reliability demanded by global enterprises.

# The Watson Explorer platform

The Watson Explorer platform provides applications at three different levels (Figure 1). At the foundation of the platform is Watson Explorer’s connector framework, which allows Watson Explorer to tap into virtually any application or data management system to extract data for indexing, analysis, interpretation and visualisation. A sophisticated security model enables Watson Explorer to map the access permissions of each and later enforce these permissions. The connector framework also allows rapid creation of new connectors for additional data sources.

At the indexing, machine learning, search and analytics level, information from each data source is transformed and processed using many different analytic tools, including machine learning, content conversion, text analytics, entity extraction and content analytics. These processes ensure that the resulting index will yield highly enriched results and relevancy and provides the needed structure for navigation and visualisation. All features are API accessible for embedding in other solutions and applications.

Watson Explorer’s search combines content and data from many different systems throughout the enterprise and presents it to users in a single view, dramatically reducing the amount of time spent looking for information and increasing their ability to work smarter. Watson Explorer’s unified information applications deliver data, analytics and cognitive insights relevant to the user’s role, context and current activities.

The Watson Explorer management and application layer includes tools, options and templates that simplify developing, configuring, deploying and managing solutions, as well as user profile management, authentication, security and query routing to external sources. Personalisation capabilities ensure that each user receives relevant content based on his or her role and access rights in the organisation. Watson Explorer capabilities in this layer include the Content Analytics Studio, Cognitive Miner and Solutions Gallery for developing, using and managing content analytics solutions.

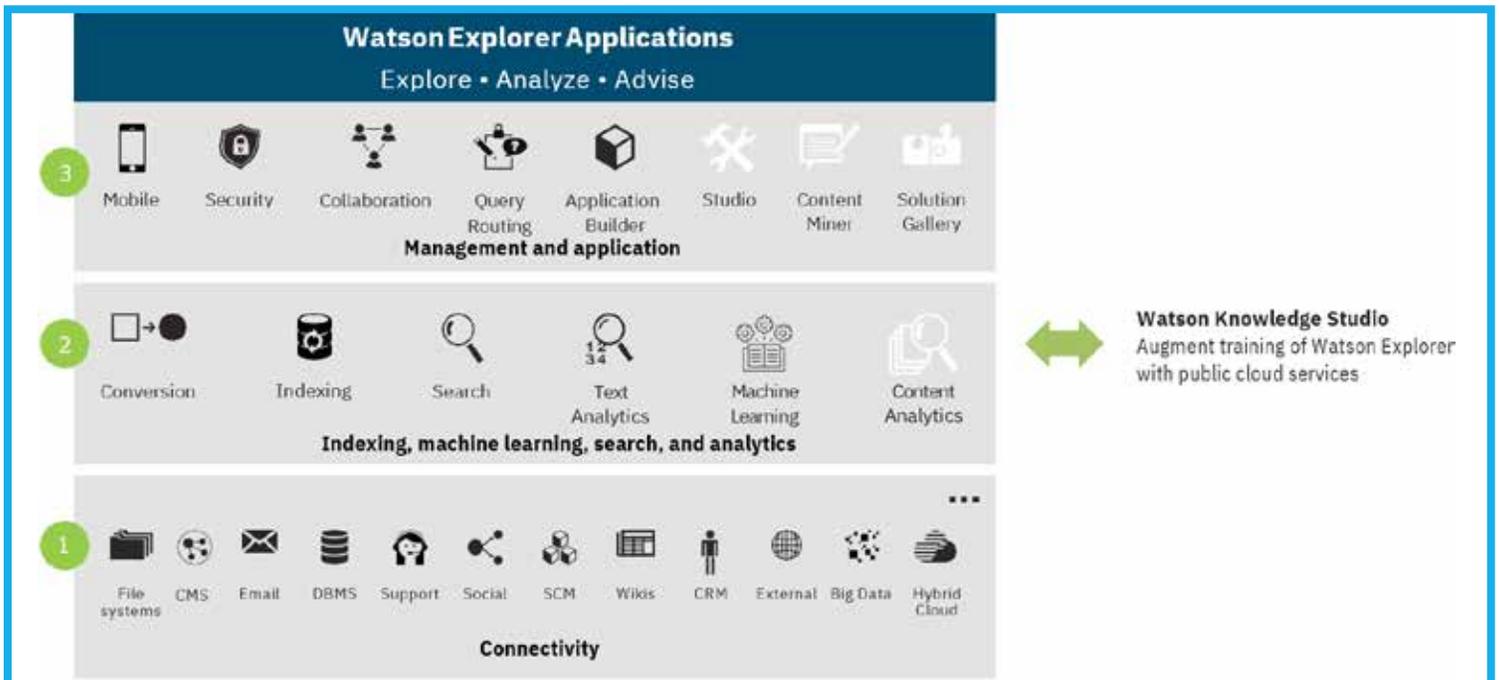


Figure 1: The Watson Explorer platform integrates multiple applications at three different connectivity levels to augment indexing, machine learning, search and analytics functions, as well as to provide convenient management and interfacing between applications.

## Unique capabilities

Many organisations have attempted to address their information challenges with enterprise search solutions. Watson Explorer addresses all the requirements of an enterprise search solution while going **far beyond the scope of a typical solution**. Watson Explorer provides unique architectural advantages and delivers unique, advanced capabilities such as content analytics, unified information applications and more. This section includes descriptions of the accessible API, scalability, personalisation and security features, just to name a few that set Watson Explorer apart from traditional enterprise search systems.

### Accessible API

As the world moves into the era of big data and the volume, velocity and variety of data increases, so too do the opportunities for that data to provide insights and solutions. Watson Explorer allows you to embed cognitive functions into other applications, giving you flexibility to build custom solutions that fit your specific industry or employee needs.

Watson Explorer enables you to leverage the power of your data in more accessible or feasible locations, or to more fully integrate Watson Explorer into day-to-day data problem-solving. For example, an insurance company built a custom application that calls Watson Explorer and guides and assists in decisions of claim acceptance and rejection. Watson Explorer analyses the unstructured claim data and then the company's custom solution rejects or accepts the claim based on adjustable criteria. This frees up employees to provide better service to the customer.

### High connectivity and security

Watson Explorer minimises the steps required to connect users to a wide variety of different data sources.

Whenever possible, Watson Explorer uses the most 'remote-friendly' protocols available when connecting to cloud-based sources or repositories. Watson Explorer provides a scalable interface for indexing huge volumes of data, supporting capabilities such as throttling to optimise bandwidth and disk access, management of hardware clusters, index sharding, rebalancing and graceful failover in the event of hardware or networking failure.

Along with broad connectivity comes the requirement for security. Security at the document, sub-document and record level is built into Watson Explorer. When Watson Explorer security is implemented, users cannot access information that they would be prohibited from seeing if they were directly logged into the target system.

### Advanced content analytics

Watson Explorer provides advanced content analytics and content mining for unstructured content. Capabilities such as entity and concept extraction can be used to improve exploration across all Watson Explorer solutions. Watson Explorer provides content analytics tools to enable advanced content mining and related features to help organisations take the next step to aggregate, analyse and visualise massive amounts of unstructured content to expose new insights. See "Analyse: Gain deeper insights using content analytics" on page 10.

*Watson Explorer is like a cable network: the widgets in our unified information applications function like channels, delivering relevant, actionable insights to specific users.*

### Ability to handle all types of data

Information is often divided between 'structured' data, such as financial records, customer data and sales statistics and 'unstructured' data, such as design documents, market intelligence information and customer case reports. A third category of 'semi-structured' data has become increasingly important in recent years. Users often access these different types of content separately through different applications or not at all.

However, the barriers between these different data types are technical limitations, which may impede users from being able to efficiently use this information. Watson Explorer erases these barriers to provide users with a comprehensive view of all information, delivering contextual intelligence, actionable insights and information optimisation.

## Scalability

To meet the needs of large global organisations and the challenges of big data, search-based solutions must be scalable. Watson Explorer is designed to scale broadly across your organisation and support redundancy and reliability. It delivers high performance across a distributed environment and supports the ability to handle terabytes of information while limiting infrastructure costs.

For the largest indexing and search-based applications, the Watson Explorer framework provides automatic index rebalancing across clusters and the ability to 'push' data for indexing, thus removing barriers of scale and adding the ability to develop simple-to-deploy, cloud-ready, big data exploration solutions.

## Expert identification and location

Often the most valuable resource on a topic is not a document but a person. Watson Explorer helps users quickly identify experts on a given topic within their organisation through several methods. It also tracks content and the activities of colleagues through the Activity Feed. Experts can be identified based on the information that they have authored, biographical profile, contact details, or the tags that they have created for sharing information. Expert location tools help global organisations maximise the value of their internal knowledge to improve business processes.

## Collaboration

Watson Explorer includes a range of collaboration tools to leverage the knowledge and experience of peers and associates to improve information access. With Watson Explorer, end users can rate search results using a numerical scale. Users can also tag search results with keywords, save information into personal or shared virtual spaces and folders and add their own knowledge or ideas about information to share with everyone to use and discover.

## Personalisation

The Watson Explorer Application Builder enables you to deploy unified information applications that deliver role-based solutions, enabling users or groups to view information tailored to their specific business needs. For example, customer service representatives can see a different set of information than employees in research and development, information that better supports their core activities.

Individual users can also set up alerts to be notified of new information that relates to their interests. By selecting and arranging available UI widgets, end users can control the type of information presented and the layout of their views within constraints set by the system administrator.

*Watson Explorer Deep Analytics Edition combines content and data from many different systems throughout the enterprise and presents it to users in a single view, dramatically reducing the amount of time spent looking for information and increasing their ability to work smarter. Watson Explorer's unified information applications deliver data, analytics and cognitive insights relevant to the user's role, context and current activity.*



Explore



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## Explore: Secure access to all your information

Watson Explorer securely explores and analyses data from both inside and outside the organisation and applies the power of machine learning (ML) to advise you on key trends and deep insights in your information to help you make highly confident decisions. Watson Explorer is at the forefront of technical capabilities that deliver diverse content analytics and cognitive insights to users in the appropriate context.

### Natural language query

Watson Explorer lets users query in natural language rather than just with keywords. Natural language query (NLQ) simplifies the search process, allowing users to ask questions and this natural interaction makes the data accessible far beyond basic search functionality. The integrated ML (Figure 2) and new cognitive assistant (Figures 3 and 4) allow Watson Explorer to understand the context of an NLQ and return results that answer the specific question. Combined with the flexibility of the accessible API, which allows you to build and embed Watson Explorer into other applications, Deep Analytics Edition provides a powerful method to discover new insights in all your data.

### Search and relevancy

Relevancy of information is a critical capability in Watson Explorer. Users often start their information-gathering process by entering a simple query. Watson Explorer's ML capabilities (Figure 2) enable organisations to maximise user satisfaction by providing superior relevancy of search results. In addition, Watson Explorer provides many tools and techniques for modifying the way information is displayed, ranging from sorting order to applying user ratings and ranking.

Administrators can configure their solution to rank search results by different factors, such as word proximity, synonyms, source and link analysis.

Watson Explorer enables broad access to many different data sources and formats. However, it is not always efficient or optimal to index all important content.

For example, subscription-based information services may block access or prohibit indexing through licensing. There may be legacy search systems, databases, or applications that host or access data, targeted for migration or retirement that an organisation prefers not to index. To ensure broad access to all important information, regardless of whether it is indexed, Watson Explorer includes an optional query routing module that submits a query to one or more systems and then merges the results with other search results, depending on an application's requirements, freshness and more.

### Navigation

Watson Explorer provides multiple ways to organise and navigate information visually to give users a faster, more thorough exploration of information. The intuitive UI provided by Watson Explorer require little or no training for users to gain immediate value. Put users in command of their exploration experience with simple yet powerful controls. Navigate by the following:

- Topical categories created either during indexing or on the fly
- Metadata
- Data repository
- Entity
- Numerical graphs and charts.

You can provide visual controls that let users click on an area of a chart or graph to restrict a result set to the items represented in the selected area.

Powerful content analytics capabilities in Watson Explorer and other cognitive analysis services accessible via the Watson Developer Cloud enable extraction of concepts, entities and other elements from unstructured text, which can be used to enhance navigation. In one quick glance, users can see large amounts of information organised for easy drill-down to enable them to focus on what they are looking for and eliminate irrelevant information.

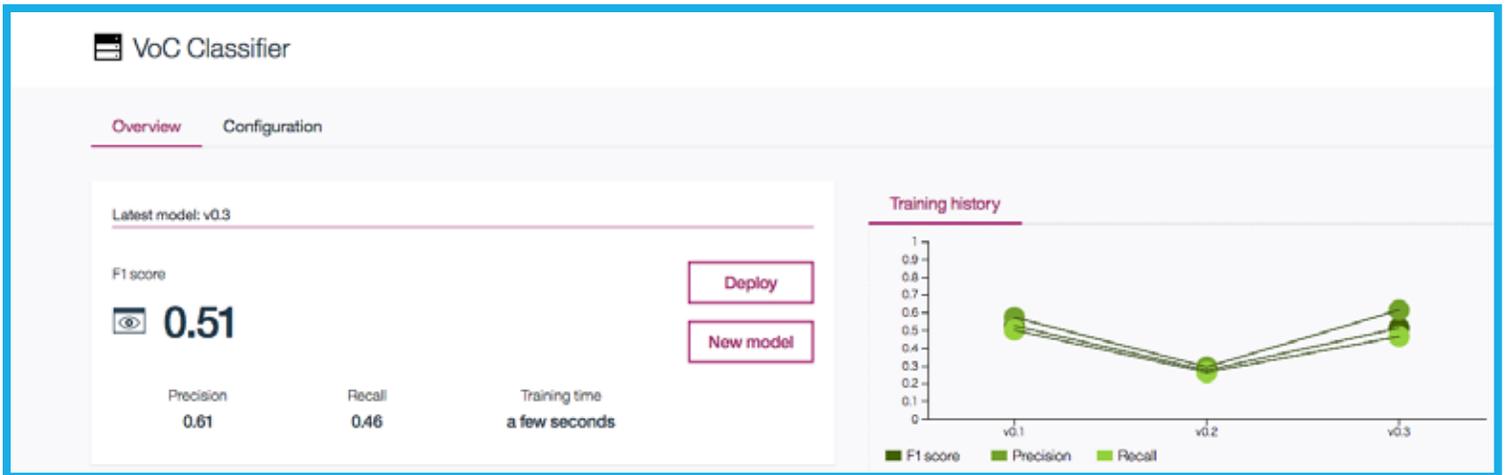
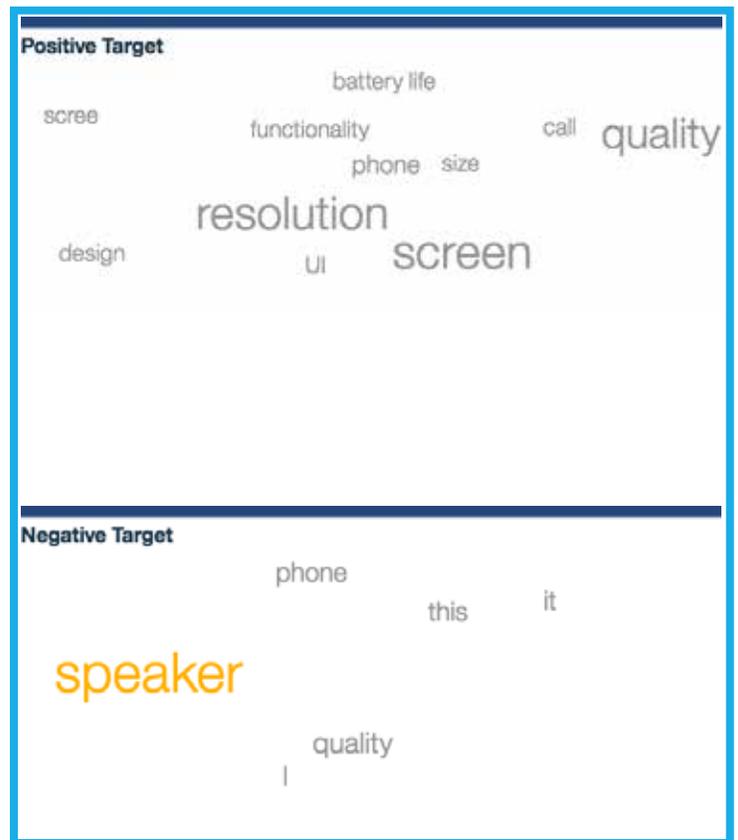


Figure 2: Watson Explorer’s machine learning models can be configured, trained and evaluated using built-in features. In this example, a customer feedback classifier is being trained and refined.

**Documents** Show Fields Hide Fields

50 | 1 - 30 of 852

TITLE	DATE	CLUSTER
cvc/sample_data3.csv? id=f193b653a-7a59-402e-bb7f-73a78c511783	01/01/2016	package_container
The straw was peeled off from the juice pack.		
cvc/sample_data3.csv? id=b20e6707-fd9-480-8e46-072643a93db	01/02/2016	contamination_tampering
I got some ice cream for my children, but there was something like a piece of thread inside the cup.		
cvc/sample_data3.csv? id=4553a98c-c8c0-46be-abb1-0b047a05deba7	01/02/2016	amount_shortage
I could only find 11 cups in the 12-pack.		
cvc/sample_data3.csv? id=e02e5b8-c02a-4ed7-a190-4ae5b540bb74	01/02/2016	package_container_leak
There was a stain on the package that seemed to be caused by a leak. Is it safe to drink?		
cvc/sample_data3.csv? id=2188c60-4281-47a1-829f-773ae0249372	01/03/2016	ads
I love the ads for the new milk chocolate. Could you tell me the name of the actor in the commercial?		
cvc/sample_data3.csv? id=46b398eb-6ed2-4cb7-a66f-2478ebef130	01/03/2016	prank



Figures 3 and 4: Watson Explorer Deep Analytics Edition’s ML model interprets both structured and unstructured information, in context. Watson Explorer learns and interprets your data as it is exposed to it, looking at past behaviours to give you better recommendations on trends and insights with powerful sentiment analysis capabilities.

## Application Builder

The Watson Explorer Application Builder (Figure 5) enables Watson Explorer administrators and developers to build unified information applications that connect users with the information and insights they need for optimal performance, based on their current role and context.

*Your organisation can develop and deploy Watson Explorer unified information applications to add high value to business imperatives, such as improving customer engagement and lifetime value; creating successful marketing strategies; developing safer, more innovative products; and managing field operations.*

Watson Explorer unified information applications enable rapid development of end-user applications and can deliver information, analytics and cognitive insights to users who would otherwise struggle to get the information they need.

Applications built with the Application Builder use the Watson Explorer index, as well as other services, to combine information from many different sources. For example, you could use the Application Builder to provide a unified view of customers, products and accounts to customer-facing professionals, or provide capacity planners with a unified view of a physical asset or project.

Using the Watson Explorer Application Builder, a developer or administrator defines relevant entities, such as customers, accounts and products and then creates entity pages comprised of widgets that deliver information from data sources and analytic services accessed by Watson Explorer. Application Builder provides the developer with guided customisation options to enable rapid creation of a polished application tuned to the user's role. The resulting application enables end users to select which widgets they want to display and arrange them through a drag-and-drop UI to create a personalised view of each type of entity.

## Activity feed

The Activity Feed feature lets users follow any topic, such as a person, company, or subject and receive the most current information, as well as post comments and view comments posted by other users. To further enhance collaboration, the Shared Spaces feature enables a user to drag information from a widget into a collaboration space for future reference and to allow other users to view and discuss. New information that is relevant to the space can be collected and filtered into the space as well.

Watson Explorer unified information applications can be enhanced by advanced content analytics capabilities provided by the following:

- Watson Explorer Deep Analytics
- Integration of cognitive and information analysis services
- Data from Representational State Transfer-based (RESTful) web services.

For more information, refer to “Analyse: Gain deeper insights using content analytics” (page 10) and “Advise: ML for your data” (page 12).

In addition to providing a unified view of information and analytics for end users, the Watson Explorer Application Builder also enables integration of data, queries and business logic from Watson Explorer applications into other applications.

Applications built with the Watson Explorer Application Builder can transform information-intensive activities and deliver solid, measurable Return on Investment (ROI) through more efficient operations, improved employee engagement, revenue attainment and improved customer loyalty.

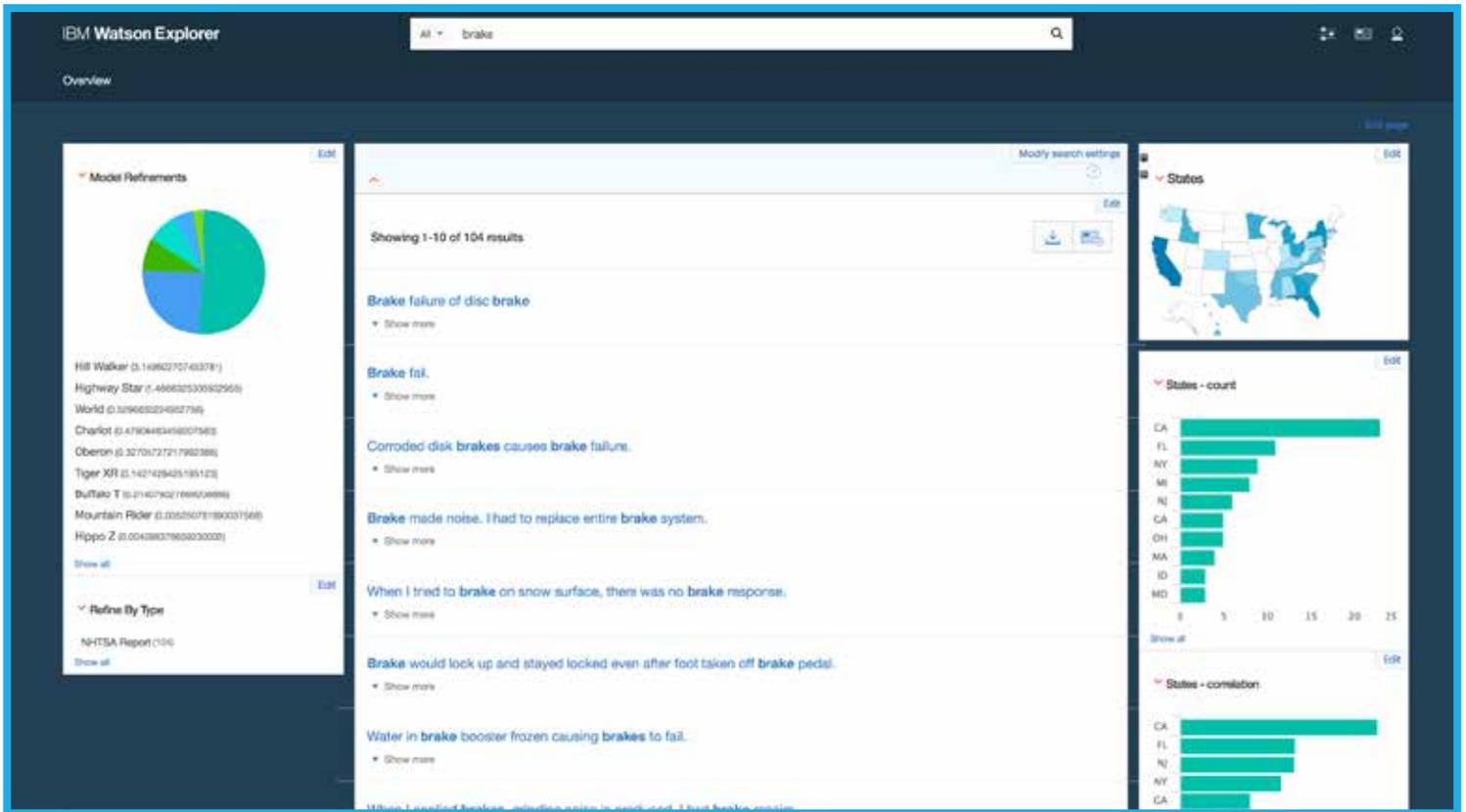


Figure 5: The Watson Explorer Application Builder provides the right user with the right information. Each pane can be customised according to a variety of different metrics and sources, allowing for flexible, scalable information displays.



Explore



Analyse



Advise

## Analyse: Gain deeper insights using content analytics

Most organisations are well versed in using structured data from databases, data warehouses and transactional systems to understand the operation of their businesses. But what about the large volumes of unstructured data that are present in most organisations, documents, email messages, call centre transcripts, social media content and other human communications?

The advanced content analytics capabilities in Watson Explorer have similar benefits to structured analytics tools. Both reveal insights such as trends, patterns and correlations. However, Watson Explorer provides additional value by extracting insights from unstructured information using natural language processing technology combined with a variety of analytic tools. While structured analytics can provide insight on the what, where and when of a business challenge or opportunity, content analytics provides insights to answer the why and how.

Watson Explorer solutions do not require creation of advanced complicated models and have the potential to deliver insights in hours rather than weeks or months.

Organisations have achieved these benefits when they successfully use and act upon insights revealed by the content analytics capabilities in Watson Explorer Deep Analytics Edition:

- Anticipating and identifying product defects
- Improving product research, design, quality and service
- Reducing customer churn
- Improving health care and reducing hospital readmission rates
- Improving human resource management

- Refining social media messaging
- Tracking and better understanding competitors
- Improving government law enforcement and intelligence gathering and interpretation.

For example, a manufacturer could anticipate and potentially avoid human injury, costly product recalls and negative publicity by analysing large volumes of customer feedback and incident reports, correlated with structured data, for early identification of product issues. A health-care organisation could potentially improve patient care and reduce readmission rates by analysing unstructured content related to patient discharge records.

Watson Explorer analyses a wide variety of structured and unstructured information sources, including enterprise applications, social media and Apache Hadoop. Analytic results can be made available to the Watson Explorer cognitive mining interface as well as to other applications and analytics tools such as IBM Cognos and IBM SPSS.

The analytic results of the Watson Explorer Cognitive Miner and assistant can also be easily ‘published’ for inclusion in Watson Explorer unified information applications, enabling users to gain added insight and context from the underlying content. Analytics exposed in this way can be dynamically focused based on data in the current view. In addition, metadata extracted from unstructured content can be used to enhance navigation of search results in Watson Explorer.

The Watson Explorer Cognitive Miner and Content Analytics Studio enable your organisation to create and manage components of your projects without requiring extensive programming or coding.

## Content Analytics Studio

The Content Analytics Studio enables Watson Explorer users, such as business analysts, to create advanced, rule-based annotators without writing a single line of code. Through a simple drag-and-drop interface, a domain expert can build domain- and language-specific resources into dictionaries and create parsing rules to identify facets, entities and relationships. These resources can be used by Watson Explorer when ingesting, analysing and indexing content and can be deployed with other natural language processing tools that adhere to the Unstructured Information Management Architecture (UIMA) standard of the Organisation for the Advancement of Structured Information Standards (OASIS).

## Integration with Watson Knowledge Studio

Watson Knowledge Studio is a public cloud application that enables developers and business experts to collaborate and extend existing Content Analytics Studio annotators or create new custom annotator components for unique industries. These components are also used to identify mentions and relationships in Watson Explorer collections and can also be used by Watson Discovery service and Watson Natural Language Understanding. These components can be easily administered throughout their lifecycle using one common tool and shared across Watson Explorer and those Watson Explorer services.

*“By giving our agents real-time insights into each customer’s needs, we’re creating the basis for a more satisfying customer experience.”*

*- Tetsuhiko Saito, Chief Marketing Officer,  
Mizuho Bank, Ltd.*

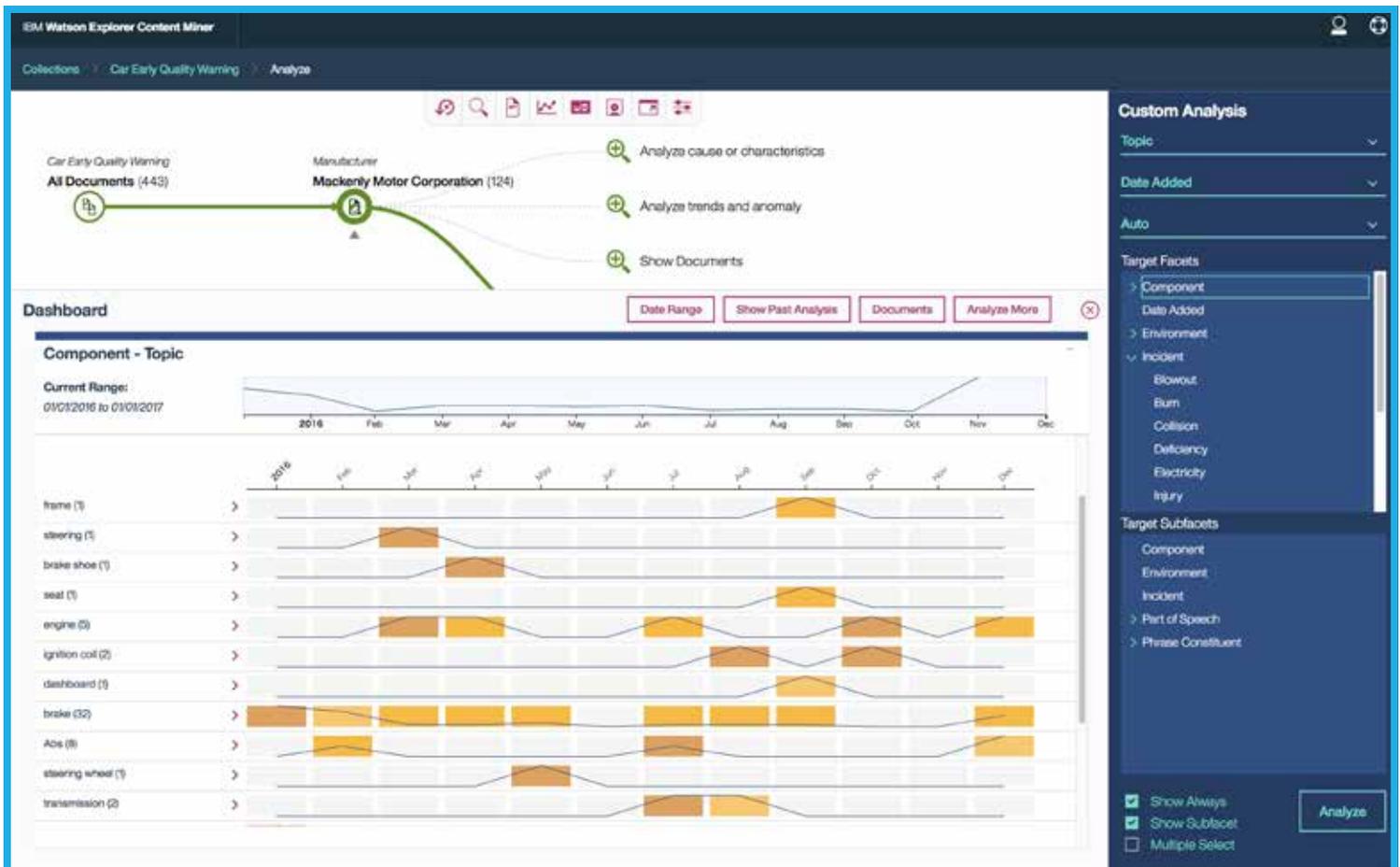


Figure 6: Watson Explorer helps you analyse product trends and customer feedback in multiple contexts. You can organise and view data by date, type of content and more using Watson Explorer’s intuitive UI.



Explore



Analyse



Advise

## Advise: ML for your data

Too often, valuable data and insights are obscured or difficult to access. If your organisation can unlock these insights, you gain the opportunity to leverage your data into measurable business benefits. The new cognitive assistant provides users with the specific data they're looking for by helping them filter through extraneous information (Figure 7). Combined with Watson Explorer's ML capability, user queries are more relevant than ever before.

In an information-driven world, all the employees in an enterprise, from the front lines to the executive suite, need one thing in common: the right information delivered at the right time, in context. The act of looking for information is time-consuming and imposes a cognitive burden on knowledge workers, which reduces their effectiveness and capacity.

The primary business benefit of Watson Explorer across all types of applications, whether delivering general information access, analytics, or the most advanced cognitive capabilities, is to scale expertise by providing users with the best information possible. The cognitive assistant in Watson Explorer Deep Analytics Edition greatly reduces the cognitive burden, allowing your employees to focus on leveraging data insights instead of wasting time trying to find information.

### Cognitive Miner

The Watson Explorer Cognitive Miner enables users to quickly narrow the focus of their unstructured data,

eliminating extraneous results and delivering specific, relevant information. The Cognitive Miner makes it easier to visualise this process by providing guided navigation (Figure 8) that filters data into smaller groups by date, keyword, or other metrics, as well as highlighting trends and common variables.

The Cognitive Miner works alongside the Application Builder to make information from many different sources both sortable and containable. For example, aircraft technicians at one of the largest airlines in Asia used these tools in concert to quickly sort through years of relevant experiential data and determine both the problem and the solution for the maintenance work. The Application Builder and the Cognitive Miner work together to both find and present the data, giving quick answers to time-pressed technicians so they can keep planes in the sky.

For more examples of solutions implemented in various industries, see "Watson Explorer in action" on page 14.

The Cognitive Miner also uses ML to develop a deep, contextual understanding of the information at hand. You can take advantage of that understanding using natural language and phrasing. Users can ask Watson Explorer a question in everyday language and the cognitive assistant will present the information they're looking for. Users can also use the Watson Explorer Content Analytics Studio to train their solution to understand more complex, domain-specific language, making the Cognitive Miner highly scalable.

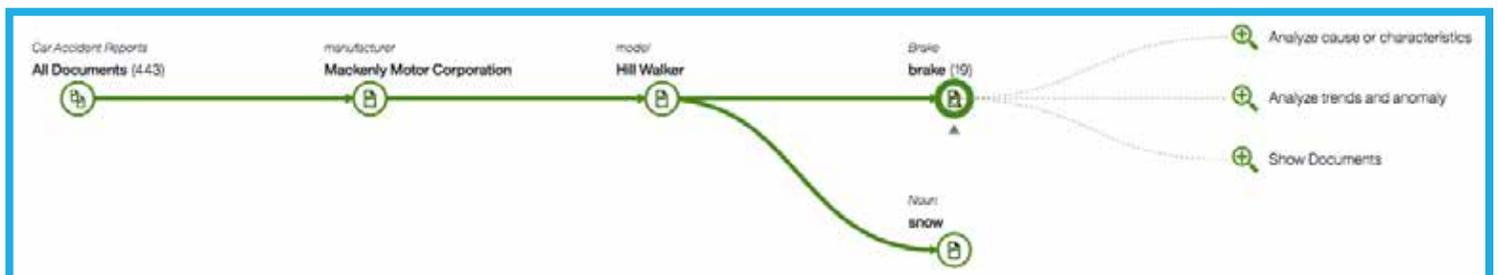


Figure 7: Watson Explorer's cognitive assistant uses machine learning to show deep insight into both structured and unstructured data, helping to guide users toward specific areas that may need more attention.

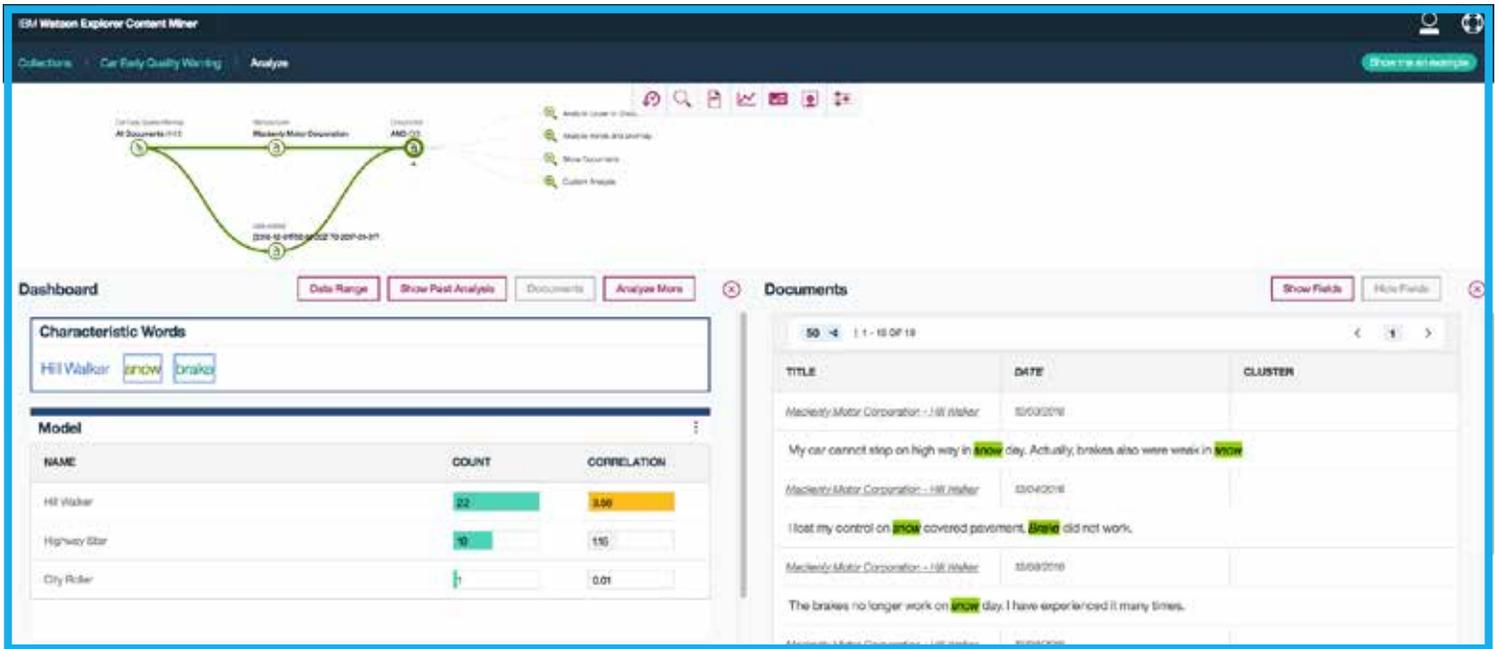


Figure 8: In this case, a QA employee is conducting a search for the word 'brake.' The cognitive assistant has used natural language processing to understand context and discover a trend between the word 'brake' and the word 'snow' on a specific make and model of car. The assistant provides links to the specific documents where the correlation between the two terms appears. Without Watson Explorer's help, the user may have spent hours sifting through documents, even missing this trend completely. Instead, the manufacturer now has actionable insight into the frequency and source of a possible brake defect.



Figures 9 and 10: Later, Watson Explorer can help the employee drill down into the discovered trend, revealing insight into the conditions in which the defect is occurring and the regions in which the defect is most often reported.

## Watson Explorer in action

The potential business benefits of Watson Explorer are available across industries and applications, since the software is highly scalable and tailorable to fit individual business needs and problems. This section contains business cases where Watson Explorer was used to streamline a company's approach to their data, increasing productivity and providing important insights that wouldn't have been accessible without the guidance and assistance of Watson Explorer.

### Manufacturing

[Honda Motor Co., Ltd.](#), one of the largest car manufacturers in Asia, implemented a cognitive solution to automate the time that quality assurance (QA) employees were spending reading free-form text. Watson Explorer helped decrease that time by 80 percent, freeing employees up to provide better customer care. Before the cognitive solution was implemented, QA employees spent up to three hours per day reading. The use of Watson Explorer to extract, analyse and understand the automaker's unstructured data helped mitigate parts quality issues more quickly, while also increasing the company's understanding of its customers, especially regarding problems and repairs.

### Transportation

[Korean Air Lines Co. Ltd.](#) decreased the time it took for maintenance technicians to search and analyse data by 90 percent, allowing them to avoid flight delays. "The air carrier supplemented human intuition with a cognitive computing solution that can ingest larger, more diverse data sets, detect more subtle connections and reach conclusions faster. This changes the equation for airlines, allowing them to spend less time on maintenance and more time in the air."

### Energy

[Flotek Industries, Inc.](#) implemented a Watson Explorer cognitive solution to stay on top of troves of data coming from thousands of oil wells in real time. "Flotek's cognitive solution will enable better decisions using ML to maximise reservoir performance. The service allows data scientists and chemists to search and analyse historical and experiential data and apply their unique technical expertise to discover critical trends and insights."

### Insurance

[Swiss Re](#), a Swiss reinsurance company with a global client base of insurance companies, mid-to-large-sized corporations and public-sector clients, implemented Watson Explorer to make their database of unstructured information accessible. Contract specialists, claims handlers and employees in the submission process needed a way to get access to the right information at the right time. The company began by enriching their search capabilities for contracts, but steadily expanded their cognitive solution to better handle claims processing and other day-to-day business functions.

### Technology

A Chinese technology provider of hardware and software solutions for customer self-service, like terminals, kiosks and robots embedded Watson Explorer in its interactive robotic solutions to power information retrieval and question-and-answering features. For example, when a user approaches the technology provider's interactive robotic solution, the robot uses Watson Explorer's ML and cognitive capabilities to interpret Chinese language questions and provide the best response.

### Banking/Finance

[Toyota Financial Services](#), a \$100 billion USD finance company, uses Watson Explorer data analytics to improve customer experience by providing a unified information gateway. The company's call centre employees can access a transparent, personalised 360-degree view of information, gated according to security clearance, without consulting a data expert, peer, or manager, all communications that would normally divert the employee's attention from providing the best possible service to the customer.

*Experience the power of ML on all your data with the new IBM Watson Explorer free trial. Gain actionable advice by quickly analysing both structured and unstructured data to improve decision-making, customer service and ROI. Leverage built-in cognitive capabilities powered by ML models, natural language processing and next-gen APIs to unlock hidden value in all your data.*

**Download the IBM Watson Explorer free trial**

# Watson Explorer system requirements

Refer to [ibm.biz/BdEj89](http://ibm.biz/BdEj89) for the most complete and up-to-date system requirements on all components.

## Hardware

### Development system:

- Single Quad-Core 2 GHz CPU
- 8 GB RAM
- 250 GB disk space

### Deployable server:

- Dual Quad-Core 2 GHz CPU
- 16 GB RAM
- 500 GB disk space

## Operating systems

### Foundational components for x86-64 system:

- Red Hat Enterprise Linux 6.0, 7.0, or later fix packs
- Microsoft Windows Server 2012 R2
- Microsoft Windows Server 2016

### Analytical components For x86-64 systems:

- Red Hat Enterprise Linux 6.0, 7.0, or later fix packs
- Microsoft Windows Server 2012 R2
- Microsoft Windows Server 2016

### oneWEX for x86-64 systems:

- RHEL 7.0, or later fix packs
- Ubuntu 16.04 Long Term Support (LTS)
- Docker Engine
- Installer for oneWEX is provided as a helm chart supported on IBM Cloud Private

## Supported browsers

- Microsoft Internet Explorer 11 and Microsoft Edge
- Mozilla Firefox 52 ESR
- Google Chrome 60.

## For more information

To learn more about IBM Watson Explorer, contact your IBM sales representative or visit [ibm.biz/watsonexplorer](http://ibm.biz/watsonexplorer)



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