101

Essential NFRs for ERP

software selection

Select

Resulting It

93% NPS

🗄 Data

Data is the lifeblood of ERP systems. ERP systems store and manage all of the data that is essential to running your business, including customer data, product data, financial data, and operational data. ERP systems use this data to automate and streamline business processes, generate reports, and make better decisions. Choosing the right NFRs around data is a key consideration in ERP selection.

Identifier	Category	Importance	Non-functional requirement
1	Data	Must have	Ability for documentation to be automatically digitised and uploaded with data automatically populated into fields, using machine learning to increase accuracy over time.
2	Data	Must have	Ability to support multiple currencies across all ledgers for transactions and reporting.
3	Data	Must have	Ability to support multiple languages as standard - English, French, German, Spanish, Italian, Luxembourgish.
4	Data	Must have	Ability to report across multiple entities, countries and jurisdictions to provide a consolidated view.
5	Data	Must have	Ability to apply forex conversion rates based on defined business rules and to resolve foreign currency valuation differences.
6	Data	Must have	Ability to capture all dates in UK format, i.e. DD/MM/YYYY (23/07/2020) and US format, i.e. MM/DD/YYYY as defined in user profile.
7	Data	Must have	Ability for bulk manipulation of data, e.g. change to area code for 0207 phone numbers - affected supplier & customer records can be easily identified and updated.
8	Data	Must have	A single centralised repository of business partners with whom we are transacting. All entities should be using the same business partner numbers and master data.
9	Data	Must have	Ability to support real-time reporting and management information within the application platform.
10	Data	Must have	To ensure technology is appropriately configured to support data archiving requirements and policies.
11	Data	Must have	Ability to securely remove data that is no longer required from the system, or data that must be purged for regulatory or legislative compliance.
12	Data	Nice to have	The solution shall allow data validation rules to be configured to prevent input of invalid data, e.g. input masks, to limit number of decimal places, avoiding negative values, only select from available from list options.
13	Data	Must have	Ability to retain and readily access data for at least 7 financial years.
14	Data	Must have	The solution must be compliant with data anonymisation for test data.

Recoverability

ERP drives many facets of your business, so ERP software failure can cause massive problems – that's why recoverability is essential in ERP selection. Consider it your insurance policy against system crashes, cyberattacks, or even human error. Robust backup and disaster recovery features ensure rapid restoration of critical data and functionalities. Recoverability minimizes downtime and safeguards productivity, customer trust, and ultimately, your bottom line.

Identifier	Category	Importance	Non-functional requirement
15	Recoverability	Must have	The solution should not lose any data at any stage of operation, including through periods of system or component failure. RPO = 0.
16	Recoverability	Must have	The ability to recover to normal operation within 4 hours following a failure of the service resulting from the loss of multiple system components or the whole of a data centre (i.e. a disaster scenario). RTO <4 hrs.
17	Recoverability	Must have	Ability to back out any unsuccessful system change and return to the state it was in prior to the attempted change without corrupting data that has been entered.
18	Recoverability	Must have	The solution shall ensure that data is backed up, retained and be restored in line with the compliance regulations.
19	Recoverability	Nice to have	The system should meet Recovery Time Objectives (RTO) and Recovery Point Objectives (RPO)

Availability

ERP systems are critical to the operation of your business and any downtime can have a significant financial impact. ERP systems also need to be resilient to failures and disruptions in order to maximise uptime and keep your business running smoothly.

Identifier	Category	Importance	Non-functional requirement
20	Availability	Must have	Product/service has proactive performance monitoring and has the appropriate measures in place to quickly resolve any issues identified.
21	Availability	Must have	Minimum target availability for the system is 99.9% for production and 99% for non-production, excluding periods of planned downtime.
22	Availability	Must have	To avoid the need for hardware and technical support and to allow for simple future expansion, the solution is required to be cloud hosted.
23	Availability	Must have	Provide the ability for the solution to be monitored and automatically provide alerts.
24	Availabililty	Must have	System maintenance processes can be scheduled to not impede normal system use during operational hours. Agreed windows for reduced service levels exist for maintenance and similar activities outside of support hours.

⚙️ Integration

Integration is essential for ERP systems to be effective - especially as we move towards a more composable future. ERP systems need to be integrated with other systems in your business, such as customer relationship management (CRM) systems, supply chain management (SCM) systems, and HR systems. Integration allows ERP systems to share data and automate business processes across your entire organization.

| Identifier	Category	Importance	Non-functional requirement
25	Integration	Must have	Seamless, near real-time integration of applications and flow of data between systems within the target architecture with minimal development effort.
26	Integration	Nice to have	In the event that we generate IP that we want to be able to attribute a value to, an interface into a Product Database that enables us to conduct an IP value estimate would be beneficial to streamline the process.
27	Integration	Nice to have	Native APIs to enable integration to existing systems such as Sharepoint and HR.
28	Integration	Must have	The solution shall ensure all interfaces are based on open web standards (RESTful, SOAP, etc) unless specifically mandated otherwise.
29	Integration	Must have	All bespoke developments required to meet the Company requirements must utilise standard Company platforms, adhere to the Company's development standards and be approved by the Company. These will be reviewed on a case by case basis to ensure these requirements cannot be met by standard functionality, and configuration.
30	Integration	Must have	Ability of new versions of applications and data to be backwards compatible with previous releases.
31	Integration	Must have	Integration should be provided through the use of platform agnostic APIs.
32	Integration	Must have	The services utilised for integration must have the facility to be encrypted in line with the security policies of the organisation and must provide access to data migration tools which may be located on premise or in the cloud (e.g. Azure Data Factory).
33	Integration	Must have	The service must provide a full business level API service (ideally JSON/REST but other industry standards are available).
34	Integration	Nice to have	The solution shall ensure public APIs are clearly documented for ease of consumption by client and other approved third parties requiring access.

🛡️ Security

Security is essential for ERP systems. ERP systems store and manage sensitive data, such as customer data, financial data, and operational data. This data must be protected from unauthorized access, modification, or destruction. ERP systems also need to be governed by clear policies and procedures to ensure that they are used in a compliant manner. Finally, ERP systems need to have risk controls in place to mitigate the risks associated with their use.

Identifier	Category	Importance	Non-functional requirement
35	Security	Must have	System web administrative interfaces will be protected from critical web application security risks as defined in the Open Web Application Security Project (OWASP) Top 10 Most Critical Web Application Security Risks.
36	Security	Must have	All system components must pass regular vulnerability scans and have no vulnerabilities with Common Vulnerability Scoring System (CVSS) score of 4 or above.
37	Security	Must have	Network traffic between the end user device and the system shall be Transport Layer Security 1.2 (TLS 1.2) encrypted.
38	Security	Must have	Ability to support role based access control, allowing access to only the functions required by a user's role or permissions.
39	Security	Must have	Every unsuccessful attempt by a user to access an item of data shall be recorded on an audit trail.
40	Security	Must have	A single central user repository with the appropriate authorisations and approvals in place to support fully auditable Segregation of Duties.
41	Security	Nice to have	Ability for the software to check Segregation of Duties compliance within roles.
42	Security	Must have	System shall support users to comply with the Company's Password Usage and Management policy, in particular providing the ability to choose and reset own passwords.
43	Security	Must have	Ability to support multi-factor authentication standard e.g Duo or Google Authenticator

Identifier	Category	Importance	Non-functional requirement
44	Security	Must have	Servers should ideally be hosted in the UK. Europe may be considered.
45	Security	Must have	Ability to comply with the Company's Access Control and Account Management Policy.
46	Security	Must have	Ability to comply with the Company's Information Protection Policy particularly with regard to the handling of Personal Information.
47	Security	Must have	Ability to support the Company's Identity and Access Management Platform.
48	Security	Must have	Compliance with regulations stipulated by Special Forces in terms of data security.
49	Security	Must have	Ability to authenticate users using Company directory services e.g Azure SSO, ADFS, Google and support multifactor authentication.
50	Security	Must have	Users must be locked after three failed attempts.
51	Security	Must have	Users must change the initially assigned login password immediately after the first successful log in.
52	Security	Must have	The solution shall ensure that there is authentication, authorisation and user management for access for any public APIs, using common standards.
53	Security	Must have	The solution shall store sensitive data in databases or log files only as absolutely necessary and protect it with security software and/or hardware, encryption or truncation, or a combination thereof.
54	Security	Must have	The service shall be kept up to date with security patches. High risk/priority patches applied within 24 hours of publication.
55	Security	Must have	The supplier shall meet "Cyber Essentials Plus" security standard (or equivalent / improved standards).
56	Security	Must have	Ability to view and produce reports from the system audit log. Ability to integrate with the existing platform for system audit log management and reporting.
57	Security	Must have	Ability to create an audit log which records changes to specific data elements. As a minimum the audit log should record date / time, nature of, and who has made the create, update, delete or read (for confidential information).
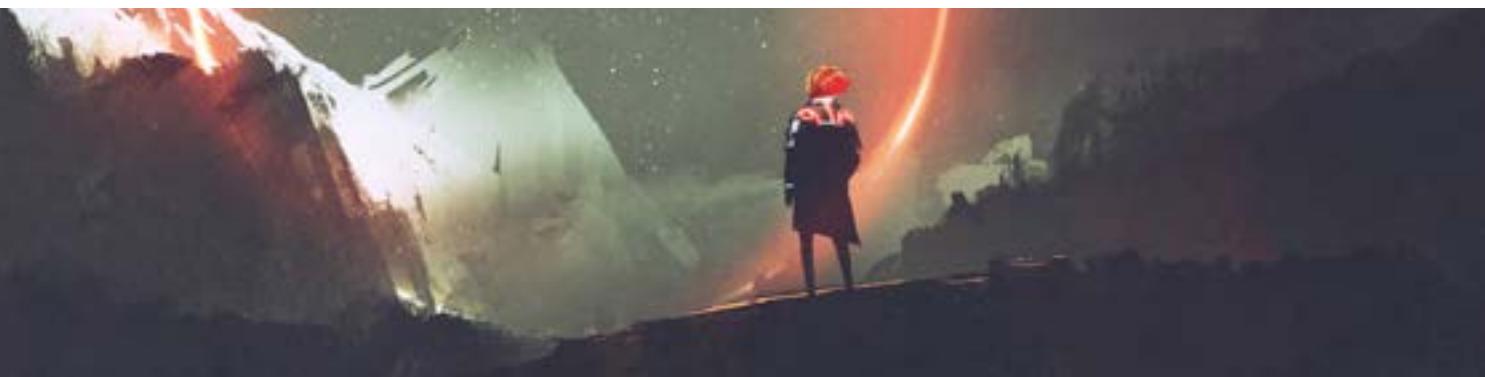
🛠 Usability

Usability is essential for ERP systems. ERP systems are complex software solutions that are used by a variety of people from executives to the IT department to front-line employees. ERP systems need to have a good user experience and be compatible across a range of devices and operating systems. Ultimately, the ERP system you choose should make it easier for people to do their job.

Identifier	Category	Importance	Non-functional requirement
58	Usability	Must have	Ability to run on both Windows PCs and Macbooks.
59	Usability	Nice to have	Ability to minimise data entry through the automated pre-population of already-held data at every data-input stage.
60	Usability	Nice to have	Ability to configure exception reports and alerts based on defined business rules. For example, the ability to write reports with specific fields to identify unposted journals, or other incomplete/ incorrectly carried out tasks.
61	Usability	Must have	Ability to search for any transaction/supplier/customer etc. using one/a number of fields.
62	Usability	Must have	Ability to search for any transaction/supplier/customer etc. using incomplete data and/or wildcard search character in the field.
63	Usability	Must have	Ability to provide an integrated solution for various subledgers, allowing information to be shared by these subledgers and general ledger within the accounting system.
64	Usability	Must have	Ability to navigate (drill-down or roll-up) from one related transaction to another e.g. via hyperlinks.
65	Usability	Must have	Ability to add extra data fields on transaction and master data forms for reporting purposes.
66	Usability	Must have	Help available to users via in-system help function at main data-entry stages, e.g. raising a sales order/purchase requisition; submitting expense claim, etc.
67	Usability	Must have	Ability to have automated escalation/alerting/reminders/ forwarding of pending actions e.g. approvals.
68	Usability	Must have	Ability to set-up out-of-office functionality for system notifications, e.g. to reroute workflow approvals and delegate when the original recipient is on leave.
69	Usability	Must have	Ability to create automated system notifications and reminders, e.g. e-mail; in-system messaging, etc.
70	Usability	Must have	Ability to have user self-service portals/dashboard for review and approval actions (i.e. worklist), e.g. workflow approvals outstanding; number of POs not yet goods-receipted, etc.

Identifier	Category	Importance	Non-functional requirement
71	Usability	Must have	Ability to have 14 periods in each financial year (12 calendar months, plus adjustment period and tax minimum).
72	Usability	Must have	The following frontend response times are expected as an absolute minimum from the solution towards end users; login (2s), screen navigation (1s), data retrieval (2s), saving 2s), image display (2s).
73	Usability	Must have	Ability to receive & issue electronic documentation to and from 3rd parties.
74	Usability	Nice to have	Supplier portal to enable and support supplier self service.
75	Usability	Must have	The solution should allow file-based download/upload of data using standard formats such as CSV and XML.
76	Usability	Must have	The solution should allow file-based upload of project file data in .xer and .mpp formats.
77	Usability	Nice to have	The solution shall provide the ability for post-implementation organisational changes to be easily configured for organisation restructures/Chart of accounts and reporting hierarchy changes/the addition of new business entities.
78	Usability	Nice to have	The solution shall be web browser accessible and compatible with modern common web browsers (e.g. Chrome, Edge, Safari etc).
79	Usability	Nice to have	The solution shall be responsive to deal with differing device and screen sizes.
80	Usability	Must have	Ability to impose workflows on processes, dependent on e.g. user/group role, which determine flow of e.g. approvals, notifications.
81	Usability	Must have	System shall provide a good experience for users which enables them to complete tasks efficiently. Training requirements must be minimal for users.
82	Usability	Must have	100% of all screen interactions to return to user control within 1000ms. The concurrency should reflect the Company's employees. Vendors should specify their concurrency estimates and give the rationale for them.
83	Usability	Must have	Users can access or interact with the system via: web browser, PC app, mobile web, mobile app, web chat, phone, e-mail.
84	Usability	Must have	System shall comply with the company user interface branding standards.
85	Usability	Nice to have	The solution shall provide an integrated chat tool / digital assistant to provide help to users.
86	Usability	Must have	Systems shall support the Company's mobile and remote working policy.

🏛 Regulatory and legal compliance

Regulatory and legal compliance is essential for ERP systems. ERP systems store and manage data that is subject to a variety of laws and regulations, such as financial regulations, privacy regulations, and data security regulations. ERP systems need to be able to comply with all applicable laws and regulations that apply to your geography and industry.

Identifier	Category	Importance	Non-functional requirement
87	Regulatory & legal compliance	Must have	The solution shall conform to The Public Sector Bodies (Websites and Mobile Applications) (No.2) Accessibility Regulations 2018. (where applicable)
88	Regulatory & legal compliance	Must have	Must comply with the Privacy and Electronic Communications Regulations (PECR).
89	Regulatory & legal compliance	Must have	Ability to comply with any project/product specific regulations and commit to work promptly to adapt to changes in Government requirements.
90	Regulatory & legal compliance	Must have	Ability to comply with Payment Card Industry (PCI) Data Security Standards for Ecommerce credit and debit card payments.
91	Regulatory & legal compliance	Must have	System shall meet level AA of the Web Content Accessibility Guidelines (WCAG 2.1 AA) as a minimum for web-based interfaces and document content.
92	Regulatory & legal compliance	Must have	Ability to comply with the Company Data Protection Code of Practice, which covers all information policy standards including the Company Data Protection Policy, General Data Protection Regulation (GDPR) and The Data Protection Act, The Equalities Act.
93	Regulatory & legal compliance	Must have	Must be compliant with UK and other International / European / local statutory & legislative requirements in the geographies that the system will operate in.
94	Regulatory & legal compliance	Must have	Ability to provide statutory accounts in the required local country structure direct from the ERP solution.
95	Regulatory & legal compliance	Must have	Ability to file online submissions electronically to the relevant governing bodies e.g. Making tax digital.

🛠️ Configurability

Configurability is essential for ERP systems. ERP systems are complex software solutions that need to be adapted to meet the varying needs of the different departments in the business. This means that ERP systems need to be configurable in terms of their functionality, data model, and user interface.

Identifier	Category	Importance	Non-functional requirement
96	Configurability	Must have	System is flexible, scalable and can be shaped to meet changes (for example, new policy or legislation) without having to undergo redevelopment or bespoke customisation.
97	Configurability	Must have	Ability to scale up and down to support planned transaction volumes as per approved sizing estimates
98	Configurability	Must have	The proposed Solution should only contain configuration and bespoke code that delivers the requirements.
99	Configurability	Nice to have	The system should retain an audit trail for configuration changes.
100	Configurability	Nice to have	The system should only permit changes from designated roles
101	Configurability	Must have	The system should support non-production environments for purposes including testing, training, pre-production and fault resolution. Ability to have a test and training system which can be consistently and repeatedly restored to a known state (across all components) to facilitate testing and training scenarios.

Select

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