

Prioritisation as a Tool for Enhancing the Effectiveness of Forensic Support in Criminal Investigations: Global Experience

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The Article Purpose is to acquaint readers with the global practice of prioritisation in forensic activities using general scientific research methods, as well as systematic, functional, formal-logical and other approaches, and to define prioritisation essence, outline prioritisation focus areas in investigative and forensic expert activities, and to determine ways of implementing tech-driven prioritisation in practical activities of law enforcement agencies for enhancing the efficiency of criminal investigations in the prevailing circumstances. Prioritisation is viewed as an innovative tool for enhancing the effectiveness of forensic support in criminal investigations amid digital transformation and for addressing the burgeoning scale of evidentiary material. It is demonstrated that traditional methods of analysis are becoming increasingly inefficient, whilst the implementation of prioritisation enables procedural resources to be optimised, investigation timelines to be shortened, and the accuracy of expert conclusions to be enhanced. It has been proven that in modern criminalistics, prioritisation is gradually evolving from a supporting management tool into a fundamental methodological approach. Drawing on international experience, we have identified key approaches to prioritisation (general theoretical, tactical-strategic, technical-forensic, and innovative). The significance of prioritisation as a fundamental methodological tool of modern forensic science has been underscored. In forensic practice, prioritization is

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fundamentally defined as a dynamic process of assessing, sorting and ranking objects (information, physical evidence, investigative actions) according to their degree of relevance, evidentiary value and risk of loss, carried out with the aim of optimising procedural resources, overcoming delays in crime investigations, and ensuring the rapid attainment of results that are crucial for ascertaining the truth in a case. Promising areas for further research into the application of prioritisation in forensic activity have been singled out.

Keywords: *prioritisation; forensic support; forensic activity; forensic examination; global experience.*

Research Problem Formulation

Rising digitalisation of social relations and integration of cutting-edge technologies into criminal activities have fundamentally restructured the pre-trial investigation process. Today's criminalistics is facing an unprecedented surge in information, where the volume of digital data seized by investigators and analysed by forensic experts is growing exponentially, placing a strain on existing technical and human resources. Traditional approach to evidence analysis, involving linear (sequential) and exhaustive study of all seized forensic objects, items, and data, may prove not only inefficient but often impossible. This leads to delays in pre-trial investigations, wasted time, and to loss of crucial evidence. In view of this, existing traditional methods and tools for forensic support of criminal investigations require improvement: innovative approaches to the allocation of procedural resources should be adopted in order to optimise investigative and forensic activities. One such avenue is prioritisation: a systematic process for identifying key evidentiary

information, for determining the order of investigative actions and most effective tactics for performing them, for selecting the ideal sequencing for ordering forensic examinations and implementing methods of expert research, etc.

Many countries worldwide consider prioritisation to be an integral part of forensic practice, as evidenced by numerous academic publications and police reports. Recent research validates that prioritisation in activities of investigators and forensic experts considerably reduces the time taken to investigate crimes, enhances the objectivity and accuracy of expert opinions, enables the development of an accurate investigative plan, and guarantees a better utilisation of procedural resources¹. The practice of prioritization, however, is complicated by several adverse factors, such as the risk of subjective rationality and ethical-legal issues, requiring a comprehensive academic analysis.

The issue of prioritisation in the field of combating crime in Ukraine takes on particular significance against the backdrop of the implementation of the Comprehensive Strategic Plan for Reforming

1 Cook R., Evett I. W., Jackson Gr., Jones Ph. J., Lambert J. A. A model for case assessment and interpretation. *Science & Justice*. 1998. Vol. 38. Is. 3. Pp. 151–156. DOI: [10.1016/S1355-0306\(98\)72099-4](https://doi.org/10.1016/S1355-0306(98)72099-4) (date accessed: 10.02.2026) ; Jackson Gr., Jones Ph. J. Case Assessment and Interpretation. *Wiley Encyclopedia of Forensic Science*. 2009. 15 Sept. DOI: [10.1002/9780470061589.fsa124](https://doi.org/10.1002/9780470061589.fsa124) (date accessed: 12.01.2026).

Law Enforcement Agencies as part of Ukraine's security and defence sector for 2023–2027², whereby responsiveness and effectiveness are recognised as the key indicators of the operational efficiency of law enforcement. In Ukraine, contemporary criminalistics is also undergoing a transformation due to numerous unprecedented security challenges caused by the Russian Federation's armed aggression. These circumstances have created an urgent academic and practical need to develop mechanisms that would help law enforcement agencies strengthen their operational and strategic capacities.

The relevance of this research is due to the urgent need to examine international experience in applying highly effective solutions that have already proven their worth in criminal investigations, and to adapt best practices to forensic support for criminal investigations in Ukraine

amid global digitalisation and increased workload, particularly as a result of military operations. Studying international prioritisation best practices within the field of crime fighting will enable us to define its essence and formulate scientifically sound recommendations for enhancing the forensic support of criminal investigations in Ukraine; it will also help to avoid common pitfalls and accelerate the implementation of much-needed reforms.

Analysis of Essential Researches and Publications

The issues of improving the efficiency of forensic support for criminal investigations have been the subject of significant attention from the following Ukrainian researchers: V. Konovalova³, V. Tishchenko⁴, V. Zhuravel⁵, V. Shepitko⁶, M. Kapustina⁷, A. Kovalenko⁸, V. Nehrebetskyi⁹,

- 2 Комплексний стратегічний план реформування органів правопорядку як частини сектору безпеки і оборони України на 2023–2027 роки : схвал. Указ. Президента України від 11.05.2023 р. № 273/2023. URL: <https://zakon.rada.gov.ua/laws/show/273/2023#Text> (date accessed: 16.02.2026).
- 3 Коновалова В. О. Ефективність реалізації алгоритмів у методиці розслідування злочинів. *Правові засади підвищення ефективності боротьби зі злочинністю в Україні* : мат-ли наук.-практ. конф. (Харків, 15.05.2008). Харків, 2008. С. 170–172.
- 4 Тіщенко В. В. Криміналістичні технології в теорії і практиці розслідування. *Актуальні проблеми держави і права*. 2008. Вип. 44. С. 18–24. URL: http://nbuv.gov.ua/UJRN/apdp_2008_44_6 (date accessed: 16.02.2026).
- 5 Журавель В. А. Програмування як засіб підвищення якості розслідування. *Теоретичні основи забезпечення якості кримінального законодавства та правозастосовної діяльності у сфері боротьби зі злочинністю в Україні* : мат-ли наук.-практ. конф. (Харків, 15.05.2009). Харків, 2009. С. 175–178.
- 6 Шепітько В. Ю. Техніко-криміналістичне забезпечення органів досудового слідства та якість слідчої діяльності. *Там само*. С. 33–36.
- 7 Капустіна М. В. Автоматизовані засоби криміналістичного забезпечення. *Юридичний науковий електронний журнал*. 2021. № 11. С. 691–693. DOI: [10.32782/2524-0374/2021-11/174](https://doi.org/10.32782/2524-0374/2021-11/174) (date accessed: 15.02.2026).
- 8 Коваленко А. В. Криміналістичні засоби кримінального процесуального доказування. *Вісник Національної академії правових наук України*. 2023. Т. 30. № 4. С. 293–303. DOI: [10.31359/1993-0909-2023-30-4-293](https://doi.org/10.31359/1993-0909-2023-30-4-293) (date accessed: 15.02.2026).
- 9 Негребетський В. В. Використання систем штучного інтелекту у боротьбі зі злочинністю: огляд та перспективи. *Українська поліцейстика: теорія, законодавство, практика*. 2024. № 1 (9). С. 66–70. DOI: [10.32782/2709-9261-2024-1-9-13](https://doi.org/10.32782/2709-9261-2024-1-9-13) (date accessed: 15.02.2026).

H. Avdieieva¹⁰, V. Shevchuk¹¹, et al. Prioritisation in criminal proceedings has been extensively discussed by M. Pashkovskiy¹², N. Hlynska¹³, D. Klepka¹⁴, and others. V. Shevchuk has explored the issues concerning the role and importance of prioritisation in criminalistics and criminal proceedings¹⁵. Scholars from the US, EU countries, the UK, India, China, South Korea, Pakistan and other countries contributed significantly to the development of recommendations on introducing prioritization in specific areas of forensic activity, for example: R. Cook et al.¹⁶, N. Al-Jaloud et al.¹⁷, M. Sh. Bashir and M. N. Ah. Khan¹⁸, M. Beck¹⁹, A. Shiralkar et al.²⁰, M. Giangreco²¹, G. Horsman²², J. I. James²³,

- 10 Авдеева Г. К. Технологізація криміналістики і судової експертизи: сутність і роль у судочинстві. *Питання боротьби зі злочинністю*. 2025. Т. 1. Вип. 49. С. 108–119. DOI: [10.31359/2079-6242-2025-49-108](https://doi.org/10.31359/2079-6242-2025-49-108) (date accessed: 05.02.2026).
- 11 Шевчук В. М. Пріоритезація у криміналістиці та кримінальному провадженні: методологічні засади та інноваційні підходи. *Юридичний науковий електронний журнал*. 2025. № 9. С. 393–397. DOI: [10.32782/2524-0374/2025-9/83](https://doi.org/10.32782/2524-0374/2025-9/83) (date accessed: 05.02.2026).
- 12 Пашковський М. І. Пріоритезація кримінальних проваджень за статтею 438 КК України: перспективи цифровізації. *Альманах наукових праць фахівців НДІ вивчення проблем злочинності імені академіка В. В. Сташиса НАПрН України за результатами досліджень у 2022 р.* Харків, 2023. С. 80–91. URL: <https://surl.li/frwkzf> (date accessed: 05.02.2026).
- 13 Глинська Н. В. Пріоритезація у кримінальному провадженні: поняття, ознаки, ключові аспекти та виміри. *Питання боротьби зі злочинністю*. 2025. Т. 1. Вип. 49. С. 86–100. DOI: [10.31359/2079-6242-2025-49-87](https://doi.org/10.31359/2079-6242-2025-49-87) (date accessed: 05.02.2026).
- 14 Клепка Д. І. Права людини в системі механізму пріоритезації у кримінальному провадженні. *Там само*. С. 101–107. DOI: [10.31359/2079-6242-2025-49-101](https://doi.org/10.31359/2079-6242-2025-49-101) (date accessed: 05.02.2026).
- 15 Шевчук В. М. Зазнач. твір. DOI: [10.32782/2524-0374/2025-9/83](https://doi.org/10.32782/2524-0374/2025-9/83) (date accessed: 05.02.2026).
- 16 Cook R., Evett I. W., Jackson Gr., Jones Ph. J., Lambert J. A. Op. cit. DOI: [10.1016/S1355-0306\(98\)72099-4](https://doi.org/10.1016/S1355-0306(98)72099-4) (date accessed: 19.02.2026).
- 17 Al-Jaloud N., Al-Abdulahman M., Ajlouni L. Aw, Ajlouni A.-W. The Role of Artificial Intelligence in Transforming Forensic Science: Applications, Challenges, and Future Directions. *The 4th Saudi Conference of Forensic Medical Sciences (SCFMS 25)* (27–30 Oct, 2025). DOI: [10.13140/RG.2.2.35168.75524](https://doi.org/10.13140/RG.2.2.35168.75524) (date accessed: 03.02.2026).
- 18 Bashir M. Sh., Khan M. N. Ah. A triage framework for digital forensics. *Computer Fraud & Security*. 2015. Vol. 2015. Is. 3. Pp. 8–18. DOI: [10.1016/S1361-3723\(15\)30018-X](https://doi.org/10.1016/S1361-3723(15)30018-X) (date accessed: 05.02.2026).
- 19 Beck M. Cloud Forensics Triage Framework (CFTF). 2021. 24 p. URL: <https://www.sans.org/white-papers/40415> (date accessed: 03.02.2026).
- 20 Shiralkar A., Bhabad S., Ghoderao A., Pawar I., Borisa A. Cyber Triage Tool for Digital Forensic Analysis. *International Journal of Progressive Research in Engineering Management and Science*. 2025. Vol. 05. Is. 05. Pp. 2633–2637. URL: https://www.ijprems.com/uploadedfiles/paper/issue_5_may_2025/41245/final/fin_ijprems1752918559.pdf (date accessed: 05.02.2026).
- 21 Giangreco M. Leveraging Metadata and Big Data for Criminal Investigations: Comparative Perspectives from Europe, USA and China. Milano, 2022. 15 p. URL: https://www.sistemapenale.it/pdf_contenuti/1740132961_rv-giangreco-leveraging.pdf (date accessed: 05.02.2026).
- 22 Horsman G. The importance of digital evidence strategies. *WIREs Forensic Science*. 2023. Vol. 6. Is. 1. 10 p. DOI: [10.1002/wfs2.1507](https://doi.org/10.1002/wfs2.1507) (date accessed: 05.02.2026).
- 23 James J. I. Multi-Stakeholder Case Prioritization in Digital Investigations. *The Journal of Digital Forensics, Security and Law*. 2014. Vol. 9. No. 2. Art. 6. Pp. 59–72. DOI: [10.15394/jdfsl.2014.1171](https://doi.org/10.15394/jdfsl.2014.1171) (date accessed: 10.02.2026).

V. Jusas et al.²⁴, D. A. Keatley²⁵, E. Zürcher et al.²⁶, M. K. Rogers et al.²⁷, and others. Notwithstanding the keen interest shown by forensic scientists in defining the concept and specific areas of prioritisation in criminalistics and forensic science, the concept of prioritisation as a comprehensive tool for enhancing the efficiency of forensic support for criminal investigations amid the digital transformation—based on global experience—requires a more in-depth theoretical justification.

Article Purpose

Introduce the global experience of implementing prioritisation in forensic activities and provide a theoretical definition of prioritisation essence; identify avenues for prioritization implementation in investigative and forensic activities; outline ways of introducing technology-driven prioritisation into the practical work of law enforcement agencies to enhance the effectiveness of criminal investigations in the present-day environment.

Research Methods

To fulfil the set goal, the following general research methods have been em-

ployed: empirical (observation, description), theoretical (analysis, synthesis, abstraction, generalisation, induction, deduction, explanation, classification, etc.), as well as systemic, functional, formal-logical, etc.

Formal-logical method has served to typify approaches to defining the role and essence of prioritisation in criminal proceedings, criminalistics and forensic science; functional method has been employed to analyse the impact of prioritisation on investigative and forensic activities; analysis and synthesis have been used to generalise individual academic positions and formulate our own conclusions. The study is based on an analysis of scientific papers exploring prioritisation in activities of investigators and forensic experts, specifically on works by Ukrainian and international scholars published in scientometric databases and resources such as *Web of Science*, *Scopus*, *Google Scholar*, *PubMed*, *Directory of Open Access Journals (DOAJ)*, *Open Ukrainian Citation Index (OUCI)*, etc.

Main Content Presentation

Academic literature views the *prioritisation* term (commonly used as a synonym

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- 24 Jusas V., Birvinskas D., Gahramanov E. Methods and Tools of Digital Triage in Forensic Context: Survey and Future Directions. *Symmetry*. 2017. Vol. 9. Is. 4. Art. 49. DOI: 10.3390/sym9040049 (date accessed: 10.02.2026).
- 25 Keatley D. A. Prioritizing patterns in evidence: Applying the analysis of competing hypotheses framework to criminal investigations and cold cases. *Science & Justice*. 2025. Vol. 65. Is. 5. Art. 101308. DOI: 10.1016/j.scijus.2025.101308 (date accessed: 11.02.2026).
- 26 Zürcher E., Eekelschot L., Wolcke A., Strang L. International approaches to police performance measurement. Santa Monica, Calif., USA, and Cambridge, UK : RAND EUROPE, 2023. 182 p. URL: https://www.rand.org/pubs/research_reports/RRA2790-1.html (date accessed: 10.02.2026).
- 27 Rogers M. K., Goldman J., Mislan R., Wedge T., Debrotta S. Computer Forensics Field Triage Process Model. *The Journal of Digital Forensics, Security and Law*. 2006. Vol. 1. No. 2. Pp. 19–37. DOI: 10.15394/jdfsl.2006.1004 (date accessed: 10.02.2026).

for triage²⁸, ranking, or categorisation) as a multifaceted concept that incorporates technical, tactical, and managerial aspects.

The triage term is most widely used in medicine. It refers to situations in which, due to scarce resources, the order of priority for providing treatment to injured persons is determined. This Patient Ranking System ensures that harm to patients is kept to a minimum when resources are limited²⁹.

Etymologically, the prioritisation term (from Lat. *prior* — meaning “first”) has traditionally been linked to the urgency of investigative actions, particularly in the context of criminalistics. However, in publications from recent years, the scope of this concept has become considerably broader.

Researchers from various countries give considerable attention to studying the mechanism and significance of prioritisation in activities of law enforcement agencies. Specifically, R. Cook et al. emphasize the importance of setting priorities in order to conserve procedural resources³⁰.

M. Pashkovskiy justly notes that “an extremely large number of criminal proceedings, both those registered in Ukraine and

those assigned to a specific investigator or prosecutor (due to excessive workloads), prevent (or render ineffective) manual prioritisation of each case”³¹. The scholar proposes to automate and digitise such procedural activities and to introduce a modern mechanism for prioritising criminal proceedings.

N. Hlynska highlights that prioritisation “is a key organisational factor in criminal proceedings, as the success and expected efficiency of legal action depend on the correct prioritisation of legal measures”³². She defines prioritisation as a process determined by socio-legal factors and aimed at enhancing the effectiveness of proceedings³³.

V. Shevchuk notes that “prioritisation is an integral part of criminal justice policy, setting priorities and defining the strategy for reforming the criminal justice system”. It helps maintain national security and protect public order³⁴.

Modern criminalistics is seeing prioritisation gradually evolve from a supporting management tool into a fundamental methodological approach. There is a need to develop a theoretical understanding of this term, given the massive increase in the volume of digital information and the

28 Triage. In France, a custom and right whereby a seigneur was entitled to request the appropriation of part of communal lands / Великий тлумачний словник сучасної української мови (з дод. і допов.) // уклад. та голов. ред. В. Т. Бусел. Київ ; Ірпінь, 2005. С. 1478. URL: <https://archive.org/details/velykyslovnyk/page/1478/mode/2up> (date accessed: 16.02.2026). Our context: the act of singling out/categorising.

29 Moser A., Cohen M. I. Hunting in the enterprise: Forensic triage and incident response. *Digital Investigation: The International Journal of Digital Forensics & Incident Response*. 2013. Vol. 10. Is. 2. Pp. 89–98. DOI: [10.1016/j.diin.2013.03.003](https://doi.org/10.1016/j.diin.2013.03.003) (date accessed: 01.02.2026).

30 Cook R., Evett I. W., Jackson Gr., Jones Ph. J., Lambert J. A. Op. cit. DOI: [10.1016/S1355-0306\(98\)72099-4](https://doi.org/10.1016/S1355-0306(98)72099-4) (date accessed: 19.02.2026).

31 Пашковський М. І. Зазнач. твір. С. 89. URL: <https://surl.li/frwkzf> (date accessed: 05.02.2026).

32 Глинська Н. В. Зазнач. твір. С. 96: DOI: [10.31359/2079-6242-2025-49-87](https://doi.org/10.31359/2079-6242-2025-49-87) (date accessed: 05.02.2026).

33 Там само. С. 97.

34 Шевчук В. М. Зазнач. твір. С. 393, 394. DOI: [10.32782/2524-0374/2025-9/83](https://doi.org/10.32782/2524-0374/2025-9/83) (date accessed: 05.02.2026).

limited resources available to law enforcement agencies. Accordingly, we need to move away from a linear (sequential) approach to analysing evidentiary information in favour of a selective and strategically focused one.

Researchers recommend the following approaches to defining the role and essence of prioritisation and implementation thereof in criminal proceedings, criminalistics and forensic science:

- general theoretical and managerial;
- tactical and strategic;
- technical and forensic;
- innovative.

V. Jusas et al. believe that the diversity of prioritisation (categorisation) definitions mirrors the diversity of views and points to the immaturity of this field ³⁵.

Proponents of general theoretical and managerial approaches regard prioritisation as a strategic component of criminal law policy and criminal proceedings organisation (in particular, pre-trial investigations).

N. Hlynska defines prioritisation in criminal proceedings as *“a process of ranking criminal procedural resources, conditioned by a set of socio-legal factors and carried out on the basis of a specific set of criteria meeting the requirements of current legal reality, with the aim of enhancing the effective resolution of ranking objectives”* ³⁶.

J. I. James defines prioritization as the process by which the order of case handling is determined on the basis of a range

of factors, including the severity of an offence, the presence of a suspect, and the likelihood of obtaining evidentiary information ³⁷.

Researchers at the European office of the international organisation RAND have analysed the work of police officers in many countries and identified risk prioritisation in policing as the process of categorizing and assessing risks when incidents are reported, the aim being to determine response times for the police, taking into account available resources, and to decide which incidents or evidence require immediate attention, and which can be temporarily postponed ³⁸.

Tactical and strategic approach enables us to define the role and essence of prioritization in forensic activities as an intellectual component of investigative planning.

V. Zhuravel makes a valid point that the investigative situation is a dynamic information system that is constantly changing and directly determines the course of investigation. As a result, investigators face certain obstacles in making tactical decisions ³⁹. D. A. Keatley emphasises the need to systemically rank evidence in terms of its ability to confirm or refute certain investigative hypotheses, depending on the investigative context. He employs the method of competing hypotheses. The researcher believes that this approach is particularly important when investigating unsolved crimes ⁴⁰.

35 Jusas V., Birvinskas D., Gahramanov E. Op. cit. DOI: 10.3390/sym9040049 (date accessed: 20.02.2026).

36 Глинська Н. В. Знач. твір. С. 99. DOI: 10.31359/2079-6242-2025-49-87 (date accessed: 05.02.2026).

37 James J. I. Op. cit. DOI: 10.15394/jdfsl.2014.1171 (date accessed: 10.02.2026).

38 Zürcher E., Eekelschot L., Wolcke A., Strang L. Op. cit. P. 156. URL: https://www.rand.org/pubs/research_reports/RRA2790-1.html (date accessed: 12.02.2026).

39 Журавель В. А. Загальна теорія криміналістики: генеза та сучасний стан: монографія. Харків, 2021. С. 283—306. URL: <https://lnk.ua/PeR0M3dNY> (date accessed: 12.02.2026).

40 Keatley D. A. Op. cit. P. 2, 4. DOI: 10.1016/j.scijus.2025.101308 (date accessed: 11.02.2026).

V. Shevchuk observes that *“prioritisation in forensic science is the process of organising and ranking forensic tasks, research, technical, tactical and methodological forensic tools, technologies and systems aimed at completing specific forensic (tactical) and other tasks with a view to improve the efficiency and optimisation of criminal proceedings”*⁴¹.

G. Horsman defines prioritisation as determining which objects and data should be examined first, based on their likely evidentiary value and the risk of data loss⁴². He emphasises that prioritisation is not merely a technical choice, but an intellectual component of the overall strategy for handling digital evidence.

J. I. James views prioritisation as a joint decision-making process between investigators and forensic experts regarding the priority of processing a body of evidence, thereby maximising the effectiveness of investigation within a limited timeframe⁴³. The researcher notes that this approach enables the creation of an optimal plan (strategy) for crime investigation.

The US Prosecutors' Guide states that prioritisation (triage) of physical evidence involves determining which objects should be examined first in order to obtain information pertinent to a case⁴⁴. The second section of this guide sets out recommendations on how to effectively categorize (triage) evidence through communication with a forensic expert, thereby enabling the optimisation of procedural decision-making.

Proponents of a forensic technical approach to defining the role and essence of prioritisation in forensic expert activity focus on finding ways to process physical (and, in particular, digital) evidence in a timely manner.

Scholars in the US and China⁴⁵ define prioritisation as the process of ranking objects by importance or priority. In the context of a crime scene inspection, they believe that this is a process by which electronic devices and data are analysed at the scene or in a laboratory setting to rapidly identify evidence relevant to investigation and determine the priority of subsequent forensic analyses. Researchers emphasise that in many investigations into crimes against life and personal safety (in particular, cases involving kidnapping, torture, sexual assault, etc.), time is a crucial factor, therefore, the traditional sequential approach to evidence collection, consisting of a series of stages (seizure of electronic media, transporting them to a laboratory, and the search for and evaluation of digital evidence), is no longer appropriate. M. K. Rogers et al. suggest using the CFFTPM (*Computer Forensics Field Triage Process Model*) to speed up the process of identifying victims and perpetrators; this model allows for the verification, analysis, and interpretation of digital evidence in a short period of time under “field” conditions⁴⁶. J. I. James assessed both the benefits and risks of using modern prioritisation methods in forensic analysis and concluded that prioritisation of cases is,

41 Шевчук В. М. Знач. твір. С. 395. DOI: [10.32782/2524-0374/2025-9/83](https://doi.org/10.32782/2524-0374/2025-9/83) (date accessed: 05.02.2026).

42 Horsman G. Op. cit. P. 4. DOI: [10.1002/wfs2.1507](https://doi.org/10.1002/wfs2.1507) (date accessed: 05.02.2026).

43 James J. I. Op. cit. P. 74. DOI: [10.15394/jdfsl.2014.1171](https://doi.org/10.15394/jdfsl.2014.1171) (date accessed: 10.02.2026).

44 Triage of Forensic Evidence Testing: A Guide for Prosecutors. NCJTC, 2019. P. 2. URL: <https://lnk.ua/k4xRWXxVy> (date accessed: 03.02.2026).

45 James J. I. Op. cit. DOI: [10.15394/jdfsl.2014.1171](https://doi.org/10.15394/jdfsl.2014.1171) (date accessed: 10.02.2026).

46 Rogers M. K., Goldman J., Mislán R., Wedge T., Debroya S. Op. cit. DOI: [10.15394/jdfsl.2006.1004](https://doi.org/10.15394/jdfsl.2006.1004) (date accessed: 10.02.2026).

by its very nature, inherently subjective. To prevent subjectivity, the researcher proposed formalising prioritisation according to several priority criteria ⁴⁷.

E. Casey et al. view prioritisation (categorisation) in forensic activity as the initial stage of a forensic examination ⁴⁸. E. Casey, however, emphasises that evidence categorization is a technical process that can be conducted outside a forensic laboratory by specialists with appropriate background training, which may call into question the accuracy of obtained results and the legitimacy of such categorisation ⁴⁹.

M. Beck considers prioritization (digital triage) as a method for identifying and collecting most relevant pieces of evidence in the shortest possible time, particularly in the context of major cyber incidents, when forensic experts are overwhelmed by a vast amount of potentially relevant evidentiary information ⁵⁰. The researcher explored capabilities of traditional (linear) methods for collecting and analysing digital evidence and modern cloud technologies, and identified their advantages and disadvantages. Drawing upon these findings, the author proposed the *CFTF (Cloud Forensics Triage Framework)* algorithm for use in forensic activities, designed to triage data in a cloud environment.

M. Sh. Bashir and M. N. Ah. Khan define prioritisation (triage) as a process of categorizing and ranking electronic evidence according to its relevance to a case, enabling investigators and forensic experts to locate relevant information quickly without waiting for a full forensic analysis to be completed. The scholars introduce a new system for categorising digital data using several tools and techniques for examining disk images, registry contents, log analysis, and deleted file history ⁵¹.

US researchers note that “evidence falls into three categories of utility: irrelevant, interesting, and probative”. Only through cooperation with a forensic expert, can prioritisation of these pieces of evidence be ensured ⁵².

Most foreign publications on prioritisation in forensic activities are devoted to a cutting-edge approach that involves artificial intelligence (hereinafter referred to as AI) systems to rank digital data. Notably, in the Tech Trends Report for 2025, researchers from Future Today Strategy Group defined prioritisation as a shift from the analysis of static data chains to dynamic systems, in which AI continuously and automatically analyses incoming data and ranks it according to specified criteria ⁵³.

47 James J. I. Op. cit. P. 71. DOI: [10.15394/jdfsl.2014.1171](https://doi.org/10.15394/jdfsl.2014.1171) (date accessed: 10.02.2026).

48 Casey E., Ferraro M., Nguyen L. Investigation Delayed Is Justice Denied: Proposals for Expediting Forensic Examinations of Digital Evidence. *Journal of Forensic Sciences*. 2009. Vol. 54. Is. 6. Pp. 1353–1364. DOI: [10.1111/j.1556-4029.2009.01150.x](https://doi.org/10.1111/j.1556-4029.2009.01150.x) (date accessed: 25.02.2026).

49 Casey E. Differentiating the phases of digital investigations. *Digital Investigation: The International Journal of Digital Forensics & Incident Response*. 2016. Vol. 19. Is. C. Pp. A1–A3. DOI: [10.1016/j.diin.2016.11.001](https://doi.org/10.1016/j.diin.2016.11.001) (date accessed: 01.02.2026).

50 Beck M. Op. cit. P. 1. URL: <https://www.sans.org/white-papers/40415> (date accessed: 03.02.2026).

51 Bashir M. Sh., Khan M. N. Ah. Op. cit. P. 16. DOI: [10.1016/S1361-3723\(15\)30018-X](https://doi.org/10.1016/S1361-3723(15)30018-X) (date accessed: 05.02.2026).

52 Triage of Forensic Evidence Testing P. 13. URL: <https://lnk.ua/k4xRWXxVy> (date accessed: 05.02.2026).

53 2025 Tech Trends Report : 18th Edition / FTSG : web. 2025. P. 42. URL: <https://ftsg.com/trends/> (date accessed: 05.02.2026).

N. Al-Jaloud et al. propose using AI technologies for automated categorization (triage) and analysis of evidence, facial recognition, identifying patterns in large datasets, modelling the course of a crime, and for effective investigation planning⁵⁴.

European researchers argue that AI-based prioritisation should be used at every stage of a criminal investigation: right from the moment a crime is reported⁵⁵ and a crime scene⁵⁶ is examined, and right through to the ordering of multidisciplinary forensic examinations⁵⁷. It is believed that this ensures the investigation proceeds at a brisk pace and enables swift adjustment and optimisation of investigative tactics.

By combining the ideas set out in the aforementioned reports and works by leading scholars from various countries, the following author's definition can be proposed: ***“Prioritisation in forensic activity is a dynamic process of analysing, categorising, and triaging forensic objects (information, physical evidence, procedural actions) in terms of their relevance, evidentiary value, and risk of loss, conducted with the aim of conserving procedural resources, optimising work, and eliminating bias in the criminal investigation process”***.

The overall goal of prioritisation in forensic activity is to maintain an optimal balance between the limited resources of the law enforcement system and the need to obtain highly relevant evidence in the shortest possible time in order to ascertain the truth of a case. However, mo-

dern prioritisation tools are evolving from relatively simple ways of automated data collection to comprehensive intelligent platforms that combine automated analysis, cloud computing, and AI techniques, thereby greatly accelerating the “Detection-Analysis-Decision” cycle in forensic activity.

Conclusions

Analysing publications on the use of prioritization tools in forensic activity by scholars from Ukraine, EU countries, the USA, the UK, South Korea, China, Pakistan, Saudi Arabia, Australia and other countries, we can conclude that prioritization (triage) has shifted from a linear (sequential) method of data categorization to a core principle of forensic support for criminal investigations.

Researchers propose the following approaches to defining the role, essence, and avenues of prioritisation implementation in criminal proceedings and criminalistics:

- general theoretical and managerial approach (as a strategic component of criminal law policy and organisation of criminal proceedings);
- tactical and strategic (as the intellectual component of investigative planning;
- technical and forensic (as a method for rapid analysis of physical [in particular, digital] evidence);

54 Al-Jaloud N., Al-Abdulrahman M., Ajlouni L. Aw, Ajlouni A.-W. Op. cit. DOI: [10.13140/RG.2.2.35168.75524](https://doi.org/10.13140/RG.2.2.35168.75524) (date accessed: 03.02.2026).

55 Policing in an online world: Relevance in the 21st century / Europol : web. 18 Jul 2025. 21 p. URL: <https://lnk.ua/aVpona2eD> (date accessed: 05.02.2026).

56 Best Practice Manual for Scene of Crime Examination (ENFSI-BPM-SOC-01) / ENFSI : web. Vers. 02. Febr. 2022. 39 p. URL: https://enfsi.eu/wp-content/uploads/2022/02/BPM-SOC-01-v.20220214_final_v2.pdf (date accessed: 05.02.2026).

57 Best Practice Manual for Digital Image Authentication (ENFSI-BPM-DI-003) / ENFSI : web. 2021. 43 p. URL: https://enfsi.eu/wp-content/uploads/2021/10/BPM_Image-Authentication_ENFSI-BPM-DI-003-1.pdf (date accessed: 05.02.2026).

- innovative approach involving the use of AI systems to analyse digital data at every stage of criminal investigations.

The variety of approaches adopted by scientists from different countries to prioritisation (triage) in forensic activity testifies to the incompleteness and dynamic development of this field.

An overview of numerous publications by foreign and Ukrainian scholars has demonstrated that prioritisation in forensic activity can be defined as a dynamic process of assessing, categorizing, and triaging forensic objects (information, physical evidence, investigative actions) and methods of forensic examination in terms of their relevance, evidentiary value, and the risk of lost evidence, conducted with the aim of streamlining procedural resources, overcoming delays in investigations, and ensuring the rapid delivery of results that are crucial for ascertaining the truth of a case.

Introduction of the prioritisation (triage) principle into national practice of forensic support for criminal investigations shall contribute not only to reducing the workload of investigators and forensic experts, but also to enhancing the overall level of respect for human rights by minimising undue interference in private life during the seizure and examination of data.

A promising research avenue is further development of prioritisation in forensic activity using AI, enabling intelligent ranking of incoming reports of suspected crimes and the automated sorting of large datasets (Big Data), prioritisation of objects for seizure based on their fragility and potential evidentiary value during crime scene inspections, carrying out 3D reconstructions of crime scenes and automatic object recognition.

This will also help formulate a general investigation strategy and establish the sequence of investigative actions, rank questions during interrogations and conditions for conducting investigative experiments, etc.

**Пріоритезація як інструмент
підвищення результативності
криміналістичного забезпечення
розслідування злочинів:
світовий досвід**

Галина Авдєєва

Мета статті — ознайомити (за допомогою загальнонаукових методів дослідження, а також системного, функціонального, формально-логічного та ін.) зі світовим досвідом застосування пріоритезації в криміналістичній діяльності й визначити її сутність, виокремити напрями застосування пріоритезації в слідчій і судово-експертній діяльності, окреслити шляхи впровадження технологічно керованої пріоритезації в практичну діяльність правозастосовних органів для підвищення ефективності розслідування злочинів у сучасних умовах. Пріоритезацію розглянуто як інноваційний інструмент підвищення результативності криміналістичного забезпечення розслідування злочинів в умовах цифрової трансформації та зростання обсягів доказової інформації. Показано, що традиційні методи аналізу стають неефективними, а застосування пріоритезації дає змогу оптимізувати використання процесуальних ресурсів, скоротити строки розслідування і підвищити точність висновків експертів. Доведено, що в сучасній криміналістичній науці пріоритезація поступово трансформується з допоміжного управлінського елемента у фундаментальний методологічний підхід. На основі світового

досвіду виокремлено основні підходи до пріоритезації (загальнотеоретичний, тактико-стратегічний, техніко-криміналістичний, інноваційний) і доведено її значення як фундаментального методологічного інструмента сучасної криміналістики. Визначено сутність пріоритезації в криміналістичній діяльності як динамічного процесу оцінювання, сортування та ранжування об'єктів (інформації, речових доказів, слідчих дій) за ступенем їхньої актуальності, доказової значущості й ризику втрати, який здійснюють з метою оптимізації процесуальних ресурсів, подолання затримок у розслідуванні злочинів і забезпечення швидкого отримання результатів, які мають вирішальне значення для з'ясування істини у справі. Виокремлено перспективні напрями подальших наукових досліджень щодо застосування пріоритезації в криміналістичній діяльності.

Ключові слова: пріоритезація; криміналістичне забезпечення; криміналістична діяльність; судова експертиза; світовий досвід.

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Declaration of Competing Interest

The author declares no conflict of interest.

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