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# The 2020 Human Artifact Index: The Economics of Expertise in a Year of Disruption

## Executive Summary

The calendar year 2020 represents a singular anomaly in the trajectory of the global professional services economy. "The 2020 Human Artifact Index" provides a comprehensive, ranked catalog of the 100 most economically significant business-to-business (B2B) deliverables produced during this tumultuous period. Unlike traditional economic indices that measure raw output or GDP, this report focuses on the "artifacts" of commerce—the discrete, tangible, and high-value intellectual products created by specialized teams of lawyers, engineers, scientists, and consultants. These artifacts range from the **Emergency Use Authorization (EUA) Dossier** that unlocked the pharmaceutical response to the pandemic, to the **Chapter 11 Reorganization Plan** that managed the collapse of retail giants, to the **SPAC Merger Proxy Statement** that fueled a speculative financial boom.

This analysis reveals a profound bifurcation in the value of professional labor during 2020. While routine, commoditized deliverables faced downward pricing pressure due to economic contraction, artifacts that mitigated existential risk, navigated regulatory opacity, or facilitated rapid capital deployment saw their economic value skyrocket. The data indicates that in 2020, the "paperwork" of the global economy ceased to be mere bureaucracy and became the critical infrastructure upon which recovery was built.

The methodology employed here values these artifacts not just by their direct production costs—which often range into the millions of dollars in professional fees—but by their strategic criticality. An **M&A Fairness Opinion**, for example, is valued here based on the transaction fees and liability shielding it provides in a volatile market. Similarly, a **Clinical Trial Protocol** is assessed not merely by the hours billed by medical writers, but by the immense capital investment it governs. This index ranks these artifacts by their estimated maximum billing value in the 2020 marketplace, offering a granular view of where capital flowed when the physical world stood still.

The report is structured to provide a detailed methodology, a market context analysis of the unique pressures of 2020, the complete ranked list of 100 artifacts, and deep-dive profiles on key deliverables across eleven major sectors. It serves as a historical record of how professional expertise was deployed, priced, and valued during one of the most challenging years in modern economic history.

## Analytical Framework and Valuation Methodology

To construct the 2020 Human Artifact Index, a rigorous multi-stage evaluation process was conducted across the following primary sectors: Financial Services, Legal, Medical/Pharmaceutical, Management Consulting, Engineering, Architecture/Construction, Creative/Marketing, Technology, Real Estate, Environmental, and Scientific R&D. The objective was to isolate discrete deliverables from ongoing service retainers, establishing a "unit price" for high-end intellectual output.

### Defining the "Human Artifact"

For the purposes of this study, a "Human Artifact" is defined as a discrete, finalized professional deliverable produced for a B2B client. To qualify for the index, the item must meet three criteria:

1. **Finite Scope:** It must have a defined beginning and end, resulting in a tangible or digital product (e.g., a report, a filing, a plan, a code audit). Ongoing advisory services, such as general counsel retainers or daily management consulting, are excluded unless they culminate in a specific, billable artifact.
2. **Specialized Production:** The artifact must require the collaborative effort of a specialized team (e.g., attorneys, engineers, scientists) rather than a single individual.
3. **Economic distinctiveness:** The artifact must have a distinct market value, either through a fixed-fee engagement, a transaction-based success fee, or a clearly attributable portion of a larger project budget.

Consumer products, software-as-a-service subscriptions, and physical manufacturing goods are strictly excluded. The focus remains on the *intellectual* products that drive the service economy.

## Valuation Basis

The "2020 Economic Value" assigned to each artifact represents the typical billing range charged by top-tier service providers in the United States and Western Europe during 2020. These figures are derived from a triangulation of data sources:

- **Fee Benchmarks & Surveys:** Direct reference to industry fee schedules for legal, accounting, and consulting services.<sup>1</sup>
- **Regulatory Cost Estimates:** Analysis of statutory fees and the associated professional labor required to prepare submissions for bodies like the FDA, SEC, and EPA.<sup>4</sup>
- **Transaction-Based Attribution:** For artifacts inextricably linked to financial transactions (e.g., IPO Prospectuses), value is calculated as a specific component of the total advisory fees.<sup>6</sup>
- **Litigation & Bankruptcy Filings:** Public court records detailing professional fee applications in major 2020 bankruptcy cases (e.g., Hertz, J.Crew) provided concrete data points for legal and restructuring artifacts.<sup>8</sup>

## Ranking Logic

The 100 artifacts are ranked primarily by their **Maximum Economic Value**—the upper bound of what a premium firm (e.g., Magic Circle law firm, Big 4 accounting firm, top-tier engineering consultancy) would charge for a complex, enterprise-level engagement. Secondary weighting was applied to **Strategic Criticality**, prioritizing artifacts that were essential to business continuity or public health in the specific context of the pandemic.

## 2020 Market Context: The Trinity of Disruption

The economic landscape of 2020 was shaped by three countervailing forces that fundamentally altered the pricing and demand for professional artifacts: **Volatility**, **Virtualization**, and **Velocity**.

### The Volatility Premium

In stable economic times, valuation reports, fairness opinions, and solvency analyses are often treated as routine compliance exercises. In 2020, they became high-stakes battlegrounds. The rapid collapse of equity markets in Q1, followed by the unprecedented stimulus-driven recovery, meant that financial data had a "shelf life" measured in days. This necessitated high-frequency updates to deliverables like **Quality of Earnings (QoE) Reports**<sup>9</sup> and **Commercial Appraisals**.<sup>10</sup> Artifacts that provided an unmatched level of certainty—such as the **Solvency Opinion** for distressed boards—commanded significant premiums. The cost of error was existential; thus, the price of the artifact rose to match the liability it mitigated.

## The Virtualization of Due Diligence

The physical impossibility of site visits during lockdowns forced a radical evolution in the production of inspection-based artifacts. Traditional **Phase I Environmental Site Assessments** and **Property Condition Assessments** had to be reimaged. The **Remote Audit Report** and **Virtual Site Assessment** emerged as new standard deliverables. This shift required the deployment of new technologies (e.g., drone-based **Facade Inspection Reports**) and the drafting of complex new legal disclaimers regarding the limitations of remote observation, altering the cost structure and labor mix of these documents.<sup>11</sup>

## The Velocity of Regulation

Government intervention in 2020 was massive, global, and swift. This created an entirely new class of high-value compliance artifacts virtually overnight. The **Paycheck Protection Program (PPP) Loan Application Package**, while seemingly administrative, required complex payroll analysis and certification for large enterprises, generating significant fees for accounting firms. Similarly, the **Force Majeure Legal Opinion** became the most requested document in the legal sector during Q2 2020, as businesses across the globe sought to exit contracts due to government-mandated shutdowns. The speed at which these regulations changed meant that the "Artifact of the Moment" shifted from month to month, rewarding firms that could mobilize rapid response teams.

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## The 2020 Human Artifact Index: Ranked List (1-100)

The following table presents the top 100 professional artifacts of 2020, ranked by their maximum typical economic value.

Rank	Artifact Name	Sector	2020 Economic Value (Est. Max)	Primary Producer Teams
1	The SPAC Merger Proxy Statement (De-SPAC)	Legal / Financial	\$2,500,000+	Securities Attorneys, Auditors, Investment Bankers
2	Chapter 11 Plan of Reorganization	Legal	\$2,000,000+	Restructuring Counsel, Financial Advisors
3	M&A Fairness Opinion Report	Financial	\$2,000,000+	Investment Bank Valuation Committees
4	IPO Prospectus (Form S-1)	Legal / Financial	\$1,500,000+	Securities Attorneys, Underwriters, Auditors
5	Emergency Use Authorization (EUA) Dossier	Pharma / Regulatory	\$1,200,000+	Regulatory Affairs, Clinical Scientists, Biostatisticians
6	New Drug Application (NDA)	Pharma / Regulatory	\$1,000,000+	Medical Writers, Regulatory Affairs, Data Managers

7	Biologics License Application (BLA)	Pharma / Regulatory	\$1,000,000+	Biotech Regulatory Specialists, Process Engineers
8	Complex Commercial Litigation Expert Witness Report	Legal	\$500,000+	Economic Consultants, Forensic Accountants
9	Architectural Master Plan (Mega-Project )	Architecture	\$500,000+	Master Planners, Lead Architects, Urban Designers
10	Utility-Scale Solar Feasibility Study	Energy	\$500,000+	Energy Engineers, Financial Analysts, Environmental Consultants
11	Corporate Rebranding Strategy & Identity Package	Creative	\$500,000+	Brand Strategists, Creative Directors, Designers
12	ERP Implementation Strategy & Roadmap	Consulting	\$450,000+	IT Consultants, Business Analysts, Change Managers
13	Pre-Merger Notification Form (HSR)	Legal	\$350,000+	Antitrust Counsel, Economists

	Filing)			
14	Phase III Clinical Study Report (CSR)	Pharma	\$250,000+	Medical Writers, Biostatisticians
15	Transfer Pricing Documentation Study (Global)	Financial	\$250,000+	Tax Economists, International Tax Attorneys
16	NI 43-101 Technical Report (Mining Feasibility)	Mining	\$250,000+	Geologists, Mining Engineers, Metallurgists
17	Quality of Earnings (QoE) Report	Financial	\$150,000+	Transaction Advisory Services (TAS) Accountants
18	Commercial Mortgage-Backed Securities (CMBS) Appraisal	Real Estate	\$150,000+	MAI Appraisers, Real Estate Analysts
19	Smart Contract Security Audit (DeFi Protocol)	Technology	\$150,000+	Blockchain Security Engineers, Cryptographers
20	Executive Compensation Benchmarking Study	Consulting	\$150,000+	Compensation Consultants, HR Data Analysts

21	Supply Chain Network Optimization Study	Consulting	\$150,000+	Supply Chain Consultants, Logistics Engineers
22	Environmental Impact Statement (EIS)	Environmental	\$150,000+	Environmental Scientists, Planners, Legal Counsel
23	SOC 2 Type II Attestation Report	Technology	\$100,000+	CPA Auditors, IT Security Specialists
24	Deep-Water Drilling Program	Energy	\$100,000+	Drilling Engineers, Geologists
25	Historic Structure Report (HSR)	Architecture	\$80,000+	Historic Preservation Architects, Conservators
26	Structural Engineering Drawing Set (High-Rise)	Engineering	\$80,000+	Structural Engineers, CAD/BIM Technicians
27	Freedom to Operate (FTO) Opinion	Legal	\$75,000+	Patent Attorneys, Technical Specialists
28	Corporate Crisis Communications Playbook	Creative	\$75,000+	Crisis PR Consultants, Corporate Communications Leads

29	ISO 27001 Certification Audit Report	Technology	\$60,000+	Lead Auditors, Information Security Consultants
30	Post-Merger Integration (PMI) Plan	Consulting	\$60,000+	Management Consultants, HR & IT Specialists
31	Health Technology Assessment (HTA) Dossier	Pharma	\$60,000+	Health Economists, Market Access Consultants
32	Reservoir Simulation Report	Energy	\$50,000+	Reservoir Engineers, Geoscientists
33	Penetration Test Report (Enterprise)	Technology	\$50,000+	Ethical Hackers, Security Analysts
34	Medical Device Clinical Evaluation Report (CER)	Medical Device	\$50,000+	Clinical Evaluators, Medical Writers
35	Actuarial Valuation Report (Pension Fund)	Financial	\$50,000+	Actuaries, Financial Analysts
36	Purchase Price Allocation (PPA) Report	Financial	\$45,000+	Valuation Specialists, Accountants
37	Diversity, Equity, and	Consulting	\$45,000+	HR Consultants,

	Inclusion (DEI) Audit			DEI Specialists
38	Data Protection Impact Assessment (DPIA)	Legal / Tech	\$40,000+	Privacy Officers, Legal Counsel
39	Lobbying Campaign Strategy Plan	Political	\$40,000+	Government Relations Consultants, Lobbyists
40	Validation Master Plan (Pharma Facility)	Pharma	\$40,000+	Validation Engineers, Quality Assurance Specialists
41	Forensic Accounting Fraud Investigation Report	Financial	\$40,000+	Forensic Accountants, Investigators
42	Private Placement Memorandum (PPM)	Legal / Financial	\$35,000+	Securities Attorneys, Investment Bankers
43	510(k) Premarket Notification Submission	Medical Device	\$30,000+	Regulatory Affairs Consultants, Biomedical Engineers
44	Federal Grant Proposal (NIH/NSF)	Scientific	\$30,000+	Grant Writers, Principal Investigators

45	LEED Certification Application Package	Architecture	\$30,000+	Sustainability Consultants, LEED APs
46	Arc Flash Hazard Analysis Report	Engineering	\$25,000+	Electrical Engineers
47	Patent Application (Utility - Complex)	Legal	\$25,000+	Patent Attorneys, Agents
48	Aircraft Appraisal Report (Business Jet)	Aviation	\$25,000+	Senior Aircraft Appraisers
49	Franchise Disclosure Document (FDD)	Legal	\$25,000+	Franchise Attorneys
50	Business Interruption Claim Preparation Package	Financial	\$25,000+	Forensic Accountants, Claims Consultants
51	Geotechnical Engineering Report	Engineering	\$20,000+	Geotechnical Engineers, Geologists
52	Pharmacovigilance Periodic Safety Update Report (PSUR)	Pharma	\$20,000+	Drug Safety Physicians, PV Scientists

53	MEP Coordination Drawing Set	Engineering	\$20,000+	MEP Engineers, BIM Coordinators
54	409A Valuation Report	Financial	\$20,000+	Valuation Analysts
55	Catastrophe Modeling Report (Insurance)	Insurance	\$20,000+	Catastrophe Modelers, Actuaries
56	Traffic Impact Study	Engineering	\$20,000+	Traffic Engineers, Transportation Planners
57	Cost Segregation Study	Real Estate	\$15,000+	Tax Engineers, Construction Accountants
58	Political Polling Report	Political	\$15,000+	Pollsters, Data Analysts
59	White Paper (Strategic B2B)	Marketing	\$15,000+	Technical Writers, Subject Matter Experts
60	Cybersecurity Incident Response Retainer (Setup)	Technology	\$15,000+	Incident Response Leads
61	BIM Execution Plan (BEP)	Architecture	\$15,000+	BIM Managers
62	R&D Tax Credit	Financial	\$15,000+	Tax Attorneys,

	Study			Engineers
63	Investor Pitch Deck (Series A/B)	Financial	\$15,000+	Financial Consultants, Graphic Designers
64	Commercial Solar Feasibility Study	Energy	\$15,000+	Solar Engineers
65	Accreditation Self-Study Report (University)	Education	\$15,000+	Academic Consultants, Administrators
66	HIPAA Risk Assessment Report	Medical	\$15,000+	Compliance Officers, IT Security Auditors
67	Property Condition Assessment (PCA)	Real Estate	\$12,000+	Building Inspectors, Engineers
68	HACCP Plan (Food Safety)	Regulatory	\$12,000+	Food Safety Consultants
69	Employee Stock Purchase Plan (ESPP) Legal Doc	Legal	\$12,000+	Compensation Attorneys
70	Social Impact Evaluation Report	Non-Profit	\$12,000+	Monitoring & Evaluation Specialists

71	Marine Survey Report (Commercial Vessel)	Marine	\$10,000+	Marine Surveyors
72	Zoning Analysis Report (Commercial)	Real Estate	\$10,000+	Zoning Consultants, Land Use Attorneys
73	Aircraft Maintenance Manual (Authoring)	Aviation	\$10,000+	Technical Writers (Aviation)
74	Spectrum Valuation Report	Telecom	\$10,000+	Telecom Economists, Engineers
75	Clinical Trial Investigator's Brochure	Pharma	\$10,000+	Medical Writers, Clinical Scientists
76	Highest and Best Use Study	Real Estate	\$8,000+	Real Estate Appraisers, Planners
77	Brand Guidelines Book (Style Guide)	Creative	\$8,000+	Brand Designers
78	Phase II Environmental Site Assessment	Environmental	\$8,000+	Environmental Engineers, Geologists
79	H-1B Visa Petition	Legal	\$7,500+	Immigration

	Package			Attorneys
80	Fine Art Appraisal Report	Art	\$7,500+	Certified Art Appraisers
81	As-Built Drawing Set	Architecture	\$7,500+	Surveyors, CAD Technicians
82	Wetland Delineation Report	Environmental	\$6,500+	Wetland Scientists, Ecologists
83	Super Bowl Commercial (Production Only)	Marketing	Varies	Directors, Production Crews
84	Screenplay (WGA Sale - Feature)	Creative	\$77,000+	Screenwriters
85	TV Show Bible / Pitch Deck	Creative	\$5,000+	Showrunners, Writers
86	Retained Search Candidate Dossier	HR	\$80,000+	Executive Search Consultants
87	Safety Management System (SMS) Manual	Aviation	\$5,000+	Aviation Safety Consultants
88	ALTA/NSPS Land Title Survey	Real Estate	\$5,000+	Professional Land Surveyors

89	Phase I Environmental Site Assessment (ESA)	Environmental	\$4,000+	Environmental Professionals
90	Force Majeure Legal Opinion	Legal	\$4,000+	Contract Attorneys
91	2020 Election Campaign TV Ad Spot (Production)	Political	\$25,000+	Political Media Consultants
92	Sunshine Act (Open Payments) Report	Compliance	\$5,000+	Compliance Analysts
93	Spill Prevention, Control, and Countermeasure (SPCC) Plan	Environmental	\$3,500+	Professional Engineers (PE)
94	Commercial Lease Abstract	Legal	\$3,000+	Real Estate Paralegals, Attorneys
95	Utility Patent Application (Provisional)	Legal	\$3,000+	Patent Attorneys
96	Cyber Insurance Risk Assessment	Insurance	\$2,500+	Underwriters, Risk Engineers
97	Mold Inspection & Remediation	Environmental	\$2,500+	Industrial Hygienists

	Plan			
98	Business Valuation Report (Small Business)	Financial	\$2,500+	Certified Valuation Analysts
99	Stormwater Pollution Prevention Plan (SWPPP)	Environmental	\$2,000+	Civil Engineers, Environmental Consultants
100	Section 106 Historic Review	Environmental	\$2,000+	Archaeologists, Historic Preservationists

## Detailed Artifact Profiles & Sector Analysis

The following analysis groups the top-ranked artifacts by sector, providing detailed descriptions, pricing context, and 2020-specific insights.

### Sector 1: Financial Services & Capital Markets

#### *The Engines of Liquidity and Restructuring*

The financial services sector in 2020 was characterized by a dramatic split between distressed services (bankruptcy, restructuring) and opportunistic deal-making (SPACs, IPOs). The value of artifacts in this sector was driven by the urgency of capital needs—whether to survive a liquidity crisis or to capture a fleeting market window.

#### 1. The SPAC Merger Proxy Statement (De-SPAC)

- **Detailed Description:** This is a monumental legal and financial filing (often 400+ pages) submitted to the SEC on Schedule 14A. It details the proposed merger between a Special Purpose Acquisition Company (SPAC) and a private target company. Unlike a traditional IPO prospectus, the De-SPAC proxy allows for the inclusion of forward-looking financial projections, making it a uniquely powerful marketing tool for high-growth (and often pre-revenue) companies. It must cover risk factors, pro forma financial statements, and detailed descriptions of the target's business.
- **2020 Economic Value: \$2,500,000+.** This figure represents the aggregate legal, accounting, and advisory fees specifically attributable to the drafting and filing of the proxy statement. Legal fees alone for a De-SPAC transaction in 2020 regularly exceeded \$1.5 million, with additional costs for financial printers and auditors.<sup>2</sup>
- **Producer Teams:** Elite securities law firms (e.g., Skadden, Kirkland & Ellis), investment banking advisory teams, and forensic accounting firms.
- **2020 Market Context:** 2020 was the "Year of the SPAC," with 248 SPAC IPOs raising over \$83 billion. The traditional IPO roadshow was hampered by travel restrictions, making the SPAC vehicle—which could be negotiated via Zoom—an attractive alternative. The sheer volume of these filings caused a backlog at the SEC and a shortage of specialized legal talent, driving a "scarcity premium" on the production of these documents.

### **3. M&A Fairness Opinion Report**

- **Detailed Description:** A formal letter and supporting financial presentation provided by an investment bank to a company's board of directors. It opines on whether the consideration to be received or paid in a transaction is "fair" from a financial point of view. This document is the primary shield for directors against shareholder lawsuits alleging breach of fiduciary duty.
- **2020 Economic Value: \$2,000,000+.** Fees for fairness opinions are typically distinct from success fees and are fixed, regardless of whether the deal closes. In 2020, complexity premiums applied due to market volatility.<sup>12</sup>
- **Producer Teams:** Investment Banking Valuation Committees and Fairness Opinion Practice Groups (e.g., Duff & Phelps, Houlihan Lokey).
- **2020 Market Context:** In the volatile markets of 2020, determining "fair value" was treacherous. Stock prices crashed in March and rallied in late summer, meaning the "fair" price of a company could fluctuate by 30-40% in a single quarter. Boards were terrified of shareholder litigation alleging they sold at the "COVID bottom" or overpaid during the "tech bubble," making the Fairness Opinion a non-negotiable, high-value insurance policy.

## 15. Transfer Pricing Documentation Study (Global)

- **Detailed Description:** A comprehensive report analyzing and justifying the prices charged between related entities of a multinational corporation for goods, services, and intellectual property. It ensures compliance with OECD guidelines and local tax laws (e.g., IRS Section 482).
- **2020 Economic Value: \$250,000+.** For large multinationals, global master files and local country files can cost hundreds of thousands of dollars annually. The 2020 pricing reflects the extreme complexity introduced by supply chain disruptions.<sup>14</sup>
- **Producer Teams:** Tax Economists, International Tax Attorneys, Big 4 Transfer Pricing specialists.
- **2020 Market Context:** COVID-19 broke standard transfer pricing models. A subsidiary that was usually profitable (a "limited risk distributor") might have incurred heavy losses in 2020 due to lockdowns. Transfer pricing studies had to rigorously explain *why* these losses occurred to aggressive tax authorities to avoid penalties. The "COVID Impact Analysis" became a critical, high-value chapter in these reports, justifying deviations from historical profit margins.

## Sector 2: Legal & Restructuring

### *The Architecture of Crisis Management*

Legal artifacts in 2020 were defined by the need to navigate bankruptcy, broken contracts, and novel liability landscapes.

## 2. Chapter 11 Plan of Reorganization

- **Detailed Description:** The definitive document in a bankruptcy case that outlines how the debtor will pay creditors and restructure its business to exit bankruptcy. It includes the classification of claims, the treatment of each class (e.g., cents on the dollar), and the means of implementation.
- **2020 Economic Value: \$2,000,000+.** This figure represents the drafting and negotiation fees for the plan itself, which is the culmination of months of high-billable-hour work. In mega-cases like Hertz or J.Crew, monthly legal fees often

exceeded \$5 million.<sup>8</sup>

- **Producer Teams:** Restructuring Attorneys (Debtor's Counsel), Financial Advisors (AlixPartners, Alvarez & Marsal), Creditor Committees.
- **2020 Market Context:** The retail and travel sectors faced an apocalypse. Major filings (J.Crew, Neiman Marcus, Hertz, Latam Airlines) required plans that were exceptionally complex due to the unprecedented nature of the revenue stoppages. The Hertz plan, for instance, involved navigating a fleet of rental cars that had essentially zero demand, requiring novel financial engineering and resulting in one of the most unique equity recoveries in bankruptcy history.

## 27. Freedom to Operate (FTO) Opinion

- **Detailed Description:** A legal opinion provided by patent counsel analyzing whether a proposed product or process infringes on the valid intellectual property rights of others. It involves a deep search of patent databases and claim construction analysis.
- **2020 Economic Value: \$75,000+.** While a standard FTO might cost \$15k-\$30k, complex opinions for medical devices or pharmaceuticals in 2020 commanded significantly higher fees due to urgency and technical density.<sup>17</sup>
- **Producer Teams:** Patent Attorneys, Technical Specialists (PhD/MD level).
- **2020 Market Context:** This artifact was critical for companies pivoting to launch COVID-related products (masks, ventilators, test kits) at breakneck speed. Manufacturers needed absolute certainty they wouldn't be sued for patent infringement upon launch. The speed at which these opinions were required—often days instead of weeks—drove the premium pricing.

## Sector 3: Medical, Pharmaceutical & Regulatory

### *The Science of Survival*

This sector produced the year's most critical artifacts. The value of these documents was not just in their compliance function, but in their ability to unlock multi-billion dollar markets and end the global pandemic.

### 5. Emergency Use Authorization (EUA) Dossier

- **Detailed Description:** A specialized regulatory submission to the FDA (and global equivalents like the EMA) allowing unapproved medical products to be used in a public health emergency. It requires a synthesis of safety and efficacy data that, while less exhaustive than a full NDA, must be robust enough to justify a positive benefit-risk ratio.
- **2020 Economic Value: \$1,000,000+.** This estimate covers the intense consulting, medical writing, and data analysis fees required to prepare the submission in record time. While user fees are often waived for EUAs, the *preparation cost* is immense due to the mobilization of large, high-cost teams working around the clock.<sup>19</sup>
- **Producer Teams:** Regulatory Affairs Consultants, Clinical Data Scientists, Medical Writers, Biostatisticians.
- **2020 Market Context:** The EUA Dossier was the defining artifact of 2020. The submissions by Pfizer/BioNTech and Moderna were arguably the most economically valuable documents on earth that year. They unlocked billions in immediate government contracts and paved the way for global economic reopening. The "velocity premium" here was infinite; every day saved in preparation was worth millions in economic activity.

#### **14. Phase III Clinical Study Report (CSR)**

- **Detailed Description:** A massive document (often exceeding 10,000 pages including appendices) that integrates all clinical and statistical data from a Phase III trial. It adheres to the ICH E3 guidelines and serves as the primary evidence of a drug's efficacy and safety.
- **2020 Economic Value: \$250,000+.** This represents the cost of writing, editing, QC, and publishing the report. In 2020, expedited timelines for COVID therapeutics (like Remdesivir) and vaccines forced sponsors to pay premium rates for round-the-clock medical writing teams.<sup>21</sup>
- **Producer Teams:** Medical Writers, Biostatisticians, Clinical Operations Leads.
- **2020 Market Context:** Regulatory writing became a critical bottleneck in the global supply chain for vaccines. The CSR is the "crown jewel" of pharma documentation; without it, data cannot be submitted to regulators. In 2020, the pressure to produce error-free CSRs in weeks rather than months led to a surge in demand for high-level medical writing consultancies.

#### **34. Medical Device Clinical Evaluation Report (CER)**

- **Detailed Description:** A comprehensive report documenting the clinical safety and performance of a medical device, required for CE Marking in Europe. It involves a systematic literature review and analysis of clinical experience data.

- **2020 Economic Value: \$50,000+.** The transition to the new EU Medical Device Regulation (MDR) significantly raised the bar for CERs, increasing their length and complexity. A compliant CER for a Class III device is a major undertaking.<sup>23</sup>
- **Producer Teams:** Clinical Evaluators, Medical Writers, Regulatory Specialists.
- **2020 Market Context:** 2020 was a "perfect storm" for CERs. The implementation of the EU MDR (originally scheduled for May 2020 but delayed one year due to COVID) forced manufacturers to rewrite their entire portfolio of CERs to meet stricter evidentiary standards. Simultaneously, the demand for respiratory and diagnostic devices exploded, requiring new CERs for rapid market entry.

## Sector 4: Technology & Cybersecurity

### *The Guardians of the Remote Workforce*

As the world moved online, the attack surface for corporations expanded exponentially. Artifacts in this sector shifted from annual "check-the-box" exercises to critical infrastructure assurances.

#### 19. Smart Contract Security Audit (DeFi Protocol)

- **Detailed Description:** A line-by-line code review and security analysis of a blockchain smart contract (typically Solidity) to identify vulnerabilities, logic errors, and potential exploits before deployment to a mainnet.
- **2020 Economic Value: \$150,000+.** Top-tier firms (e.g., Trail of Bits, OpenZeppelin, ConsenSys Diligence) charged massive premiums due to the shortage of qualified auditors and the high stakes of "DeFi Summer".<sup>25</sup>
- **Producer Teams:** Blockchain Security Engineers, Cryptographers, White Hat Hackers.
- **2020 Market Context:** "DeFi Summer" 2020 saw billions of dollars pour into decentralized finance protocols. Hacks were rampant and costly (e.g., the bZx hacks). A "passed audit" report from a reputable firm became a prerequisite for attracting liquidity (Total Value Locked). The artifact itself—the PDF audit report—became a marketing asset as valuable as the code itself.

#### 23. SOC 2 Type II Attestation Report

- **Detailed Description:** An audit report issued by a CPA firm attesting to a service organization's controls relevant to security, availability, processing integrity, confidentiality, or privacy over a specific period (usually 6-12 months). Unlike Type I (point-in-time), Type II tests operational effectiveness over time.
- **2020 Economic Value: \$100,000+.** This includes the audit fees (approx. \$30k-\$50k) plus the internal readiness, gap analysis, and penetration testing costs required to achieve a clean report.<sup>27</sup>
- **Producer Teams:** CPA Auditors, IT Security Consultants, internal Compliance Officers.
- **2020 Market Context:** As large enterprises moved critical workflows to the cloud to support remote work, they demanded SOC 2 reports from *all* vendors, regardless of size. For SaaS startups, this report became the "ticket to play" in the enterprise market. The shift to remote audits also added complexity, as auditors had to verify physical security controls (e.g., server room access) via video and digital evidence.

### **33. Penetration Test Report (Enterprise)**

- **Detailed Description:** A report detailing the findings of an authorized simulated cyberattack on a computer system, performed to evaluate the security of the system. It includes a list of vulnerabilities (ranked by severity) and remediation recommendations.
- **2020 Economic Value: \$50,000+.** Enterprise-grade tests covering external, internal, and web application surfaces command high fees. In 2020, "Red Teaming" scopes expanded to include VPN vulnerabilities and social engineering of remote workers.<sup>29</sup>
- **Producer Teams:** Ethical Hackers (Pen Testers), Security Analysts.
- **2020 Market Context:** The rapid deployment of remote access tools (RDP, VPNs) created a massive new attack surface. Ransomware gangs (e.g., Ryuk, Maze) industrialized their operations. Companies paid premiums for aggressive penetration tests to find holes before the criminals did. The "remote workforce" scenario became a standard, high-value chapter in these reports.

## **Sector 5: Engineering, Architecture & Environmental**

### *Building the Safe Haven*

While construction starts slowed, the planning and engineering phases accelerated to adapt to new health and safety realities.

## 10. Utility-Scale Solar Feasibility Study

- **Detailed Description:** An exhaustive analysis of a potential solar energy site. It covers solar irradiance data, grid interconnection capacity, topography, environmental constraints, and rigorous financial modeling (LCOE).
- **2020 Economic Value: \$500,000+.** For utility-scale projects (100MW+), these studies are massive, multidisciplinary efforts. The cost reflects the high technical barriers and the financial stakes of the investment.<sup>31</sup>
- **Producer Teams:** Energy Engineers, Financial Analysts, Environmental Consultants, Land Use Planners.
- **2020 Market Context:** The renewable energy transition did not stop for COVID. In fact, ESG (Environmental, Social, and Governance) investing accelerated. Large institutional capital continued to flow into solar infrastructure, requiring robust feasibility data to de-risk investments. The extension of the Investment Tax Credit (ITC) at the end of 2020 further fueled demand for these studies.

## 25. Historic Structure Report (HSR)

- **Detailed Description:** A comprehensive document recording the history, existing condition, and significance of a historic property. It provides a roadmap for preservation, rehabilitation, or restoration, often required for grant funding or tax credits.
- **2020 Economic Value: \$80,000+.** A thorough HSR for a major landmark involves archival research, materials testing, and structural analysis.<sup>33</sup>
- **Producer Teams:** Historic Preservation Architects, Architectural Historians, Conservators, Structural Engineers.
- **2020 Market Context:** Adaptive reuse projects became a focus as developers looked to convert underutilized office buildings and hotels into residential spaces. The Federal Historic Preservation Tax Incentives program remained a key financing tool in a tight capital market. To qualify for these credits (20% of rehab costs), developers needed high-quality HSRs to justify their interventions to State Historic Preservation Offices (SHPOs).

## 46. Arc Flash Hazard Analysis Report

- **Detailed Description:** An engineering study that quantifies the thermal energy released during an electrical arc fault. It determines the Arc Flash Boundary and the required Personal Protective Equipment (PPE) for workers. It is mandated by OSHA/NFPA 70E.

- **2020 Economic Value: \$25,000+.** For a large industrial facility or hospital, this requires extensive data collection and complex modeling of the entire power distribution system.<sup>35</sup>
- **Producer Teams:** Electrical Engineers (Power Systems Specialists).
- **2020 Market Context:** Essential industries (food processing, data centers, hospitals) ran at capacity during the pandemic. Ensuring electrical safety and uptime was paramount. This artifact is critical for compliance and insurance; a facility cannot legally allow electricians to work on live gear without the labeling derived from this report.

## Sector 6: Consulting & Human Capital

### *Navigating the Human Crisis*

Consultants were the architects of the "pivot." Their artifacts provided the data and strategies companies needed to survive workforce disruption and social upheaval.

### 20. Executive Compensation Benchmarking Study

- **Detailed Description:** A data-driven study analyzing C-suite pay packages (salary, bonus, equity) relative to a peer group of comparable companies. It is the primary tool used by Compensation Committees to justify executive pay to shareholders.
- **2020 Economic Value: \$150,000+.** High fees are driven by the access to proprietary data sets and the specialized advisory required to interpret "abnormal" years.<sup>37</sup>
- **Producer Teams:** Compensation Consultants (e.g., Willis Towers Watson, Mercer), HR Data Analysts.
- **2020 Market Context:** 2020 broke all the compensation models. Financial targets set in January were obsolete by April. Boards had to decide whether to use discretion to pay bonuses in a year where targets were missed due to the pandemic ("Force Majeure" for bonuses). Consultants had to design novel retention packages to keep executives from jumping ship during the volatility, making this year's studies exceptionally complex and high-value.

### 37. Diversity, Equity, and Inclusion (DEI) Audit

- **Detailed Description:** A comprehensive assessment of an organization's workforce demographics, hiring practices, culture, and pay equity. It typically results in a report

- identifying gaps and recommending strategic interventions.
- **2020 Economic Value: \$45,000+.** Comprehensive audits for large organizations involve extensive surveying, data analysis, and focus groups.<sup>39</sup>
- **Producer Teams:** DEI Consultants, HR Strategists, Data Analysts.
- **2020 Market Context:** Following the murder of George Floyd and the subsequent global protests in mid-2020, corporate America faced an unprecedented reckoning regarding racial equity. Demand for DEI audits spiked dramatically. Corporations that had previously treated DEI as a "nice to have" suddenly viewed these artifacts as essential risk management and brand reputation documents.

## Conclusion: The Legacy of the 2020 Index

The "2020 Human Artifact Index" illustrates a profound shift in the economy of expertise. Value in 2020 was not generated by routine maintenance, but by **interventions in crisis**. The most valuable artifacts were those that bridged the gap between the "Old Normal" and the "New Normal"—whether they were legal frameworks for broken contracts, engineering plans for safer buildings, or clinical data for life-saving vaccines.

For the professional services sector, 2020 was a lesson in agility. Firms that could pivot from producing standard "Annual Audit Reports" to producing urgent "Liquidity Crisis Analyses" thrived. The index highlights that in times of global upheaval, the most expensive commodity is *certainty*. The artifacts listed here—from the **Fairness Opinion** (\$2M+) to the **Arc Flash Analysis** (\$25k)—share a common DNA: they provide a verified, expert-backed foundation upon which difficult decisions can be made. As we look forward, the artifacts of 2020 have set a new baseline for the cost of doing business in a volatile world, establishing that high-quality, specialized documentation is not merely overhead, but a strategic asset of the highest order.

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