Cipher

The Ultimate Guide to CI in Life Sciences

Cipher

Competitive intelligence (CI) is a key priority for leaders in the life sciences industry. Major players in the biotech and pharmaceutical industries—like Pfizer, Roche, and Eli Lilly—invest heavily in intelligence to ensure they are making strategically sound business decisions.

What follows here is one of the most complete guides to CI in the life sciences industry that has ever been compiled. We partnered with the **College of Integrated Science and Engineering at James Madison University** to conduct a wide-range study of leading life sciences companies to establish the role of CI in their organizations.

In addition to that, we also conducted in-depth interviews with top industry executives to capture their thinking on CI.

Whether you're just starting out in CI, or have years of experience in the industry, this guide will be a useful manual for you.

Life sciences is a rapidly changing industry, and disruption is happening at a pace seldom seen before. We'll explore the role of CI at all stages of the life sciences product lifecycle, uncover how top organizations run their CI functions, and help you understand how you can take your CI practices to the next level.

Ready? Let's dive in.

Defining Competitive Intelligence (CI)

Before launching into an in-depth exploration of CI in the life sciences industry, it makes sense to define CI itself, and particularly the role of CI in the context of the wider life sciences industry.

Competitive Intelligence (CI) is the practice of gathering information about competitors in order to identify and assess competitor strategies and anticipate competitor actions. CI insights drive strategic and tactical decision making within organizations and enable organizations to be more successful.

Understanding how organizations can drive greater CI capabilities is the main focus of this guide. However, during the course of our research, we found that many CI professionals in the life sciences industry had responsibilities extending into related intelligence disciplines.

These included:

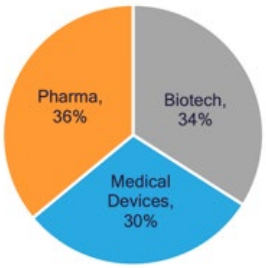
- **Market Intelligence (MI)**, which helps define the external operating environment through identifying patterns and trends in addition to other market dynamics.
- **Business Intelligence (BI)**, which uses internal data from within a company's own operations and customer metrics to improve and optimize Key Performance Indicators (KPIs), such as profitability, utilization, operational efficiency, etc.

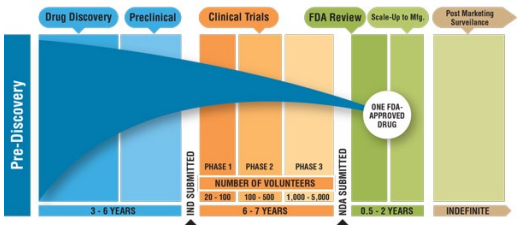
If you're interested in learning more about the nuances of the different types of intelligence, **we define intelligence in more detail here**.

An Overview of the Life Science Industry

Broadly, we define the **life sciences industry** as companies which operate in either the pharmaceutical, biotechnology, or medical devices space. The overarching aim of these companies is using science to advance and improve human life.

Our study encompasses the CI functions of leading players in all three areas. The verticals are divided almost equally into thirds in terms of their representation in our study:





The life science industry is a complex and heavily regulated space. Competition is fierce, and the stakes are high, with billions of dollars and millions of lives at stake. The industry rapidly evolves in line with new technological breakthroughs, and is driven by scientific innovation. Some of the largest players in the industry include household names like Pfizer, Roche, and Eli Lilly.

Life science companies work on the basis of a years-long, capital intensive product life cycles. Creating, developing, and receiving approval for new products can take as long as 10 to 12 years, and it often takes hundreds of millions of dollars in investment for a product to make it to market. The failure rate in product development is high, and only a very small percentage of initial discoveries ever make it to market.

The regulatory environment is a major driver of the years-long product lifecycle. Before life science companies can get to a stage where a new product can be sold commercially, multiple phases of clinical trials must be completed to satisfy FDA standards that the product is safe and efficacious for human use.

Throughout the development process, there are numerous important inflection points, and CI plays a role at each stage.

The Commercial Models of Life Science Companies

Both biotechnology and pharmaceutical companies work to produce medicines for human use. The distinctions between them are increasingly blurred as more and more companies focus on biopharma – an approach that combines biotechnology and pharmaceutical approaches in R&D. Regardless, it's important to understand the major differences, as biotechnology and pharmaceutical companies have markedly different commercial strategies.

Biotech companies' approach to product development is typically grounded in biological principles, and products are often made with human cells. Development is extremely expensive, requiring heavy capital allocation, specialized manufacturing facilities, and extensive clinical testing. When they do launch, treatments often cost hundreds of thousands, or even millions of dollars per use, and cover extremely specialized use cases.

One example: Novartis launched a pediatric cystic fibrosis drug in 2019 at a cost of over $2 million per treatment.

Pharmaceutical products are grounded in chemistry. The drugs tend to be manufactured offshore from powder compounds, and shipped as tablets. These are common, everyday products; widely-used, affordable medicines like Tylenol fall into this category. Products are often cheap, widely available, and sell in high volumes.

Many companies in the life sciences industry strike something of a balance between biotech and pharmaceutical products. However, given the lucrative nature of biotech therapies, many companies are increasingly focusing their efforts in this space. The majority of their research and development is focused on these kinds of treatments, and CI in this space is critical to corporate success.

CI and the Product Development Process

As noted, it can take many years for new drugs to pass through the product development process, but CI can play an important role no matter how many years a product is from market. It's important that CI practitioners understand the various stages of product development, and consider the role of CI at each stage.

Preclinical

The preclinical stage of drug development is centered in the academic community, National Institutes of Health (NIH) funded research labs and, increasingly, research institutes associated with regional health systems. At this stage, little thought is given to the commercial applications of new drug technologies, and research is focused on driving novel scientific discoveries. The failure rates are high, and the vast majority of research projects don't make it past this stage.

The findings of successful early stage research are published in leading medical journals, like **Nature Biotech**, **Cell**, and the **New England Journal of Medicine**. The wider industry pays particular attention to the work of the top researchers in their field – the likes of Joe Dudley at Stanford, or Chris Mason at Weill Cornell.

At this stage, the applications of CI are somewhat speculative, but that's not to say it's not worthwhile. By practicing CI, it would be possible to spot potential opportunities at the very earliest stage of their inception – when they first become proven at a basic scientific level. In some ways, this could serve as the top of the funnel for life sciences companies, and could serve to inform business development strategy.

CI and the Product Development Process

Phase 1 Trials

Once a new discovery has been peer-reviewed and published in a credible journal, commercial conversations begin between companies in the life sciences industry and the business development teams at academic research institutions. When a new drug therapy shows real promise, it is licensed by one of the major pharmaceutical companies.

In this stage, the major landmark is the **Investigational New Drug (IND) filing**. This filing is submitted to the FDA after a researcher determines that a new drug is reasonably safe for trial in humans, and that there is sufficient evidence that it could be a commercially viable treatment.

Following the IND filing, initial human trials will start, albeit in a very limited scope. The majority of Phase 1 trials are funded by pharmaceutical companies, but are primarily administered by contract research organizations, or CROs. The primary goal of this trial is establishing the safety and efficacy of the new technology.

In Phase 1, the role of CI is still relatively limited. There are many different innovations, most of which don't even have names yet, and are just referred to by their molecular names. The failure rate remains high, and only around 10% of drugs that go through Phase 1 trials ever make it to market. Because drug development is so expensive, many biotech and pharma companies operate on a 'fail fast' principle, and are quick to cut their losses if new technologies fail to show promise at this stage. It's certainly worth watching what your competitors are failing at so that you can avoid making a similar mistake.

At this stage, pharmaceutical companies will also begin the process of stratifying treatments into therapeutic areas and franchises, and identifying where new technologies would fit best with their existing portfolio.

CI and the Product Development Process

Phase 2 Trials

Phase 2 trials are larger, and tend to focus on the dosing requirements of the new drug. Typically, all kinds of variations are trialled: different dosage sizes, delivery systems, the effect on different types of patients, and much more. The aim of researchers is to determine the effects of the drug on patients, and to quantify the improvements in patient condition that result from the drug.

Towards the end of Phase 2 trials, commercial functions like marketing and sales are deployed in a more meaningful way. Resources will be allocated to explore market analytics, total market segmentation, reimbursement, and more.

CI teams will consider a vast array of data to build a clearer picture of the market for a new drug. Meanwhile, lobbyists will kick off conversations with insurance companies and the federal government.

At this stage, CI starts to play a pivotal role, quickly becoming top of mind for executives as they move closer and closer to market. **Strategic planning comes to the forefront**, and companies employ a range of CI strategies to anticipate competitor and market responses.

These include scenario planning, indicator warnings, and early warning programs. Many companies overlook critical information at this stage, so it's important CI teams know to look for **key indicators like domain purchases or changes in hiring practices**.

CI and the Product Development Process

Phase 3 Trials

By the trial stage, it's pretty much a race to bring the new drug to market and CI becomes front and center. Clinical trials are conducted on larger numbers of participants, and may take place in multiple countries, meaning there's ever more information for CI teams to process.

Biotech and pharmaceutical companies employ CI strategies to monitor competitor's trials, understand what's happening in different markets across the world, and to gauge the conversations that competitors are having with regulators and payers. The vast quantity of data in this phase from sources like Informa's research tool **TrialTrove** or Clarivate's solution **Cortellis** demands that CI teams use appropriate technology to effectively parse and analyse data. **Recent developments in Artificial Intelligence (AI)** are helping to streamline this process.

Of particular note for CI practitioners are attempts to secure breakthrough designation. This particularly applies in the biotech space, where companies are innovating new treatments to treat rare diseases. At first glance, it might not make sense, as there may only be a few thousand patients with the condition the drug promises to treat, but by demonstrating that their therapies address an unmet medical need, companies can advance through the FDA approval process significantly faster, and be the first to market with an important innovation.

Recently, we saw exactly this happen with the **COVID-19 vaccines** that are now approved for use in the U.S. and other countries. By securing breakthrough designation, companies were able to bring their treatments to market significantly faster and start addressing an urgent medical need.

CI and the Product Development Process

Launch

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CI and the Product Development Process

Post Launch - Lifecycle Management

After a new therapy has been approved and launched into the market, a corporate portfolio strategy team sits over the therapeutic area. They determine the ongoing role of the product and how to allocate resources against it. These teams run very advanced statistical models to assess where to allocate capital, and tend to occupy a very prominent position in the organization, often reporting directly to the CFO.

In the pharmaceutical industry, the majority of this work is conducted with throughput analysis, or a similar capital budgeting model. The more valuable data these groups have to input to their models, the more accurate and definitive the models will be.

For example, considerations of how comparable products are performing in international markets, or information on a new product that a competitor might be preparing to bring to market, would both be invaluable data sources for these analyses. The role of CI is to gather, organize and synthesize as much of this data as possible.

The more complete the picture, the better the corporate strategy team can advise how the company allocates its financial resources against different areas of their portfolio. By continuously employing CI, **life sciences companies are able to better react to market changes**.

How is CI Prioritized?

CI clearly plays an important role at each stage of the product development process, and arguably becomes more important as innovations come closer to market. Our study backs up the importance of CI to organizations, finding that CI is a core business activity, defined as being pivotal to an organization's functioning, for one third of the top life science companies.

Moreover, 40% of all Senior and Executive leadership in the Life Sciences industry view CI as pivotal to their organization's core business functions.

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How Do the Top Life Science Companies Do CI?

Our study analyzed more than 300 of the leading life science companies across the world, and identified these companies as having the best CI teams:

- Pfizer
- Roche
- Eli Lilly
- Teva Pharmaceuticals
- Regeneron

With the exception of Eli Lilly, who we class as operating in the biotechnology industry, all of these companies are primarily classed as pharmaceutical companies.

CI teams at these organizations are particularly strong because they are so well-resourced: the top two CI teams, Pfizer and Roche, employ dozens of CI professionals, compared to the industry average of just two CI professionals.

Another common theme in the top companies' approach to CI was the stated importance of CI to the overall performance of the company. Employees of the companies listed above were more likely to state that M/CI is a core business activity of the company. CI professionals at these elite companies were also more likely to use the categories "Strategy/Corporate Development/Business Development" and "Competitive Intelligence" when compared to other CI units.

Note that represented individuals are those with CI explicitly in their job title or description; however, other personnel across many departments also perform CI tasks as part of a wider role.

CI's Place in the Organization

There's no clearly defined template for how to structure the optimal CI team. One of the biggest distinctions to be drawn is the difference between centralized and decentralized CI teams. This distinction has significant impacts for the way that a CI team works and its role within the organization.

Centralized vs. Decentralized CI Teams

Centralized CI teams function as a standalone unit within companies. They work closely with different groups across the organization, but tend to report directly to senior management. Within this type of structure, CI professionals will collaborate closely with each other and function as a cohesive team that advances the goals of the company as a whole.

Decentralized CI teams are spread out across different organizational units within a company. For example, each therapeutic group may have it's own CI professional – one for oncology drugs, one for infectious diseases, etc. This siloed approach to CI is becoming less common as more companies pivot towards a centralized approach.

In our experience, a centralized CI team is more likely to be successful and can reduce duplicity across the organization. When a team is centralized, they work well together and don't duplicate budgets for access to the same data sources or consultants. While different groups within the centralized CI team may focus on discrete therapeutic areas, there is greater synergy between them when the CI function is decentralized.

Examples of this at work include streamlined vendor management, unified reporting to senior executives, and cost savings by reducing duplicity of work.

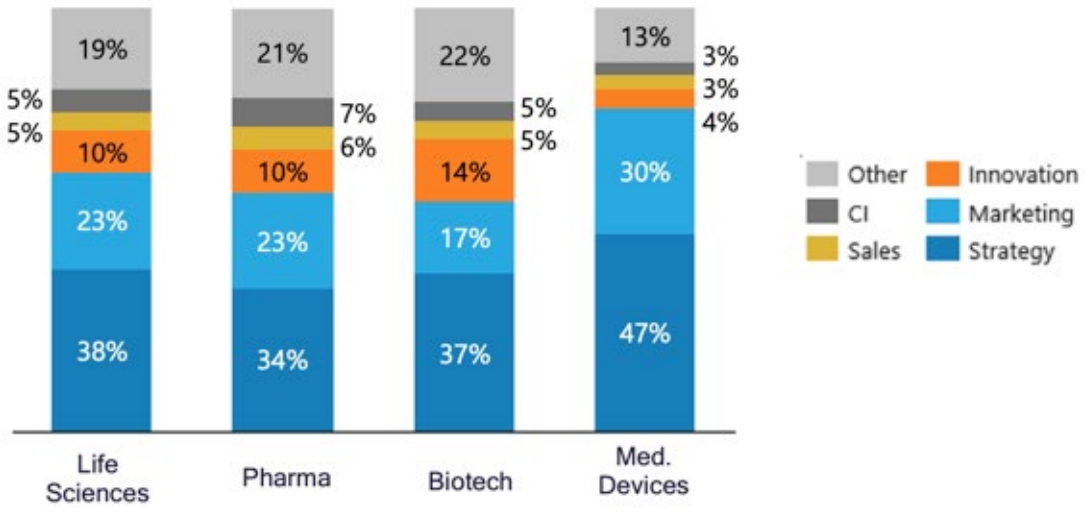
CI's Place in the Organization

The Structure of CI Teams

Regardless of the structural approach to centralization, the structure of leading CI teams in terms of the seniority of the workforce varies greatly. The top two companies in our study, Pfizer and Roche, allocate their CI staff the most equally between different organizational levels. In revenue terms, Pfizer and Roche are significantly ahead of the other companies we studied, and this could in part be attributed to their commitment to implementing CI across all levels of their respective companies.

By function, the majority of CI teams are classed as Strategy and Marketing, and this is true across all Life Sciences verticals.

Other functions include Sales, Innovation, and a standalone CI function, per the below graph:



The Role of CI in Leading Life Sciences Organizations

Broadly, the role of intelligence professionals in life sciences companies is broken down into three different functions. While the majority of our research focuses on Competitive Intelligence (CI), there are other similar functions. Many organizations use the terms “competitive intelligence”, “market intelligence”, and “business intelligence” relatively interchangeably, but there are significant differences between them. Here, we’ve broken down the key responsibilities of each of these three different, but closely related functions.

Competitive Intelligence (CI)

Competitive Intelligence (CI) teams focus on gathering and analyzing information about competitors to better inform strategic and tactical decision making at their own company. They will study the following areas as they pertain to competitors:

Marketing
Press releases, events, trade shows, social media, and website changes.

Strategy
Mission statement, goals, hiring efforts, traditional management analysis tools like Porter’s Corners and **SWOT Analyses**.

R&D
Competitor’s drug technology developments, through all development and approval phases.

Patents
Current and pending patents, anticipated new patents, and expiring patents.

Financial
Reports on new funding, stock market valuations, M&A.

Value Chain
Numbers of vendors and relationships with them, potential vulnerabilities and risks.

The Role of CI in Leading Life Sciences Organizations

Market Intelligence (MI)

Market Intelligence (MI) teams look more broadly at overall market conditions for the industries in which their company operates. Areas of study may include:

Social Trends
Public health trends e.g. telemedicine, technological advances e.g. Internet of Things (IoT).

Technical
Recent technological innovations in related fields, for example Artificial Intelligence and Big Data.

Environmental
Considerations on responsible drug disposal options, animal testing, and availability of resources.

Economical
Status of any proposed healthcare reform, changes to people's access to care, pricing considerations.

Political
Lobbying efforts of different industry stakeholders, impact of changing political landscape e.g. a change of administration.

Business Intelligence (BI)

Business Intelligence (BI) tends to be more internal-facing, and focuses on analysis of a company's own capabilities and position in areas including:

Strategy & CI
The ability of the company to make informed decisions with a positive strategic outlook.

Financial
Internal and external considerations, for example, funding, M&A activities, or stock market valuation.

Value Chain
The status of the company's own value chain, encompassing vendor relationships, vulnerabilities, and opportunities.

R&D
Progress of the company's own drug technology development process and progress towards market launch.

The Skills, Tools & Methods of CI Professionals

CI requires a wide range of different skill sets, tools, and applications. The reality is that the data that CI professionals need is scattered all over the place, and there's no one unified source that life science professionals can turn to.

As part of our study, we asked CI professionals across the three major life science verticals about the skills, tools, and methods that they believed were necessary for CI professionals today. The below word clouds show what they reported back:

	Tools & Methods	Skills
Biotech		
Medical Devices		
Pharma		

Increasingly, more and more life sciences companies are turning to **Knowledge360®** as a unified platform for CI. Knowledge360® processes information from a wide variety of sources, and uses Artificial Intelligence and Natural Language Processing to highlight the most relevant data in a cohesive, highly practical way.

If you're interested in learning more, schedule a live demo today.

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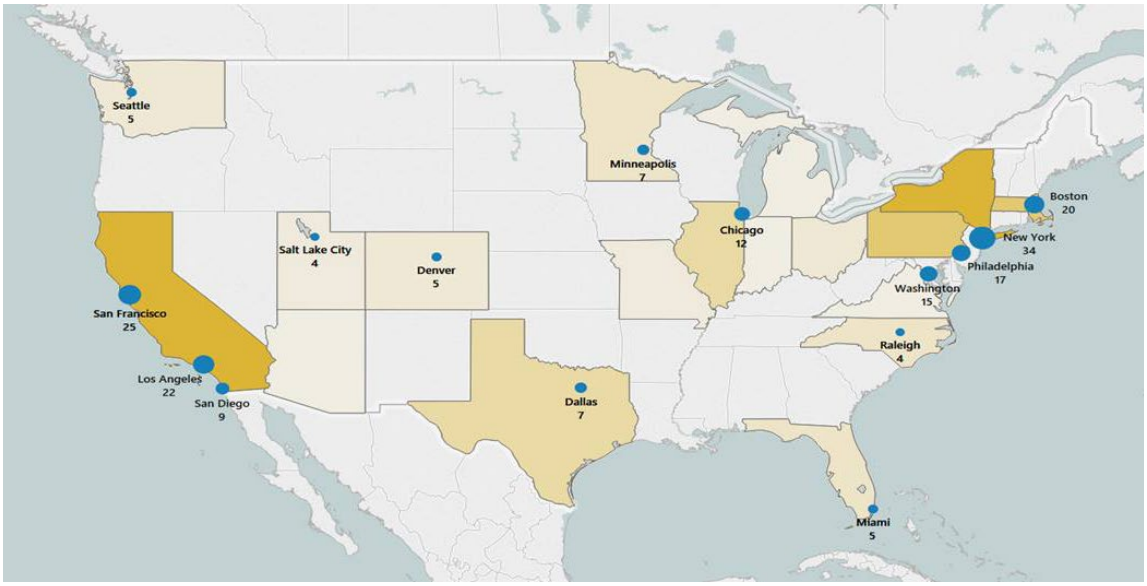
Major Geographic CI Hubs

Across the globe, the U.S. leads the charge on CI in Life Sciences, with a significant number of hubs also in Europe and Asia. We define a 'CI Hub' as an area with a particularly high concentration of CI Professionals who are employed by the top global life sciences companies.

In the United States, major hubs are concentrated in California and the North East. CI Professionals tend to be located in major cities. The most common locations are New York, San Francisco, Los Angeles, and Boston. The map below shows the sizes of different life science CI hubs across the U.S.:



Outside the U.S., Europe and Asia lead the way. Major life science CI hubs are to be found in Switzerland, Germany, and the United Kingdom, while in Asia, China is the foremost hub, closely followed by Japan, India, Thailand, and Singapore.

Currently, there is a major dearth of life science CI hubs outside North America, Europe, and Asia, and opportunities exist to develop these capabilities in Australia/Oceania, Latin America, and Africa. As these emerging markets continue to mature, we expect life science companies to begin forming a bigger CI footprint in these regions.

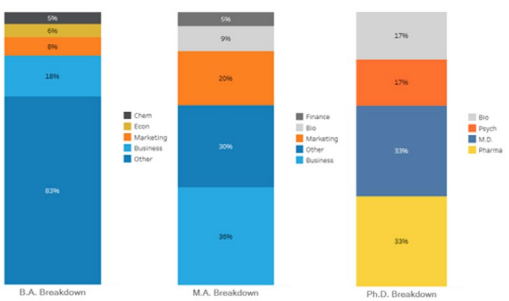
The Career Path of CI Professionals

Unlike many other professions, there is no universally traversed pathway into the CI industry. We found that CI professionals tend to have a varied background and career path.

Education

CI Professionals are an educated group. Our study found that 78% possess a bachelor's degree, while 21% hold a master's.

There were no major patterns in the types of undergraduate degrees that CI Professionals held: business, marketing, and economics were the three most popular, but a wide variety of fields are grouped under the 'Other' category in the below chart.



These patterns tend to indicate that many CI professionals studied in other fields, entered the life sciences industry, and then specialized in CI. While the majority of those seeking graduate degrees did so in relevant fields like Business Administration and Marketing, it's clear that there's no one clear academic path into CI in the life sciences.

Mercyhurst University is one of the first to establish a reliable pipeline of CI professionals. As of this writing, there aren't many more universities who have yet taken this step. As CI and its applications in the life sciences industry continue to develop, some universities are beginning to offer Business and/or Competitive Intelligence degrees and qualifications.

Examples of these programs include **Georgetown University** and **Robert Morris University**. CI professionals call more than 250 higher education institutions their alma maters. The best represented colleges in the life sciences CI field include Rutgers, Stanford, Lehigh, Penn State, and Purdue.

The Career Path of CI Professionals

Professional Certifications and Memberships

Many professionals in the CI industry hold professional certifications and memberships over and above their educational credentials. CI professionals are also active members of various LinkedIn groups related to pharmaceuticals, biotechnology, and medical devices.

Specific groups include the **Pharma Marketing and Advertising Group**, **Professionals in the Pharmaceutical and Biotech Industry**, and **Medical Device Networkers**.

The list above denotes groups specific to the Life Science space. There are also industry organizations that support the growth of CI professionals in general like **SCIP**, **CI Fellows**, and even associations like the **Product Marketing Alliance (PMA)** are seeing the value in bringing together CI professionals.

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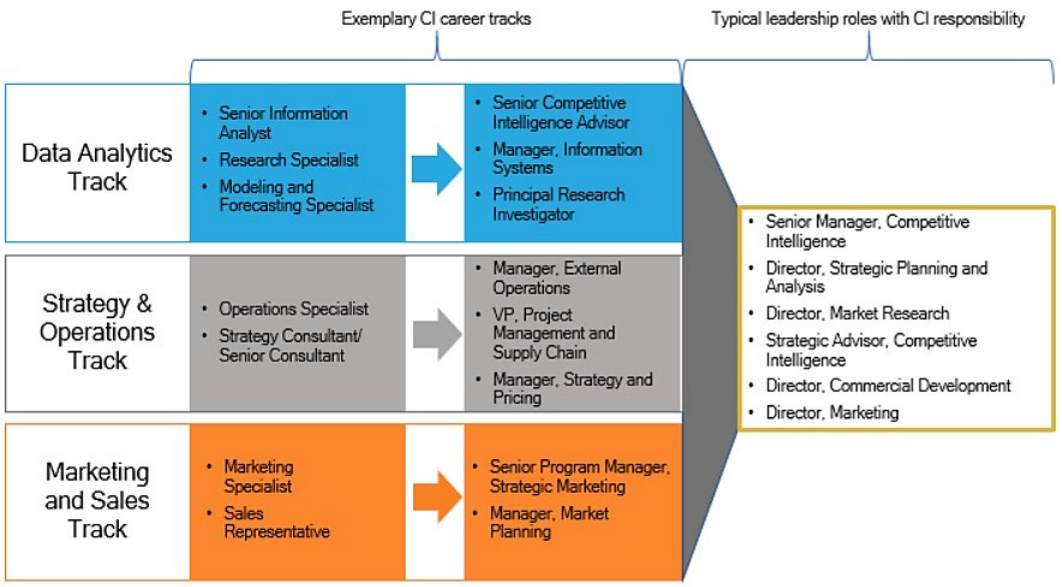
The Typical Career Path for CI Professionals

From examining the career tracks of more than 700 CI professionals in the life sciences space, we found three common paths to CI leadership roles. These are summarized in the the graphic below:



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The Typical Career Path for CI Professionals

Throughout the career of a CI professional in the life sciences industry, responsibilities will vary. We break this down by entry-level positions, mid-level positions, and senior leadership positions.

Entry Level

Marketing Analyst, Research Analyst, CI Analyst

Responsibilities include the following:

- Technical benchmarking
- Win/loss analysis
- Analytical tools
- Framework analysis (e.g. Porter's Corners, SWOT, PESTLE)
- High-level financial analysis
- Data collection

Mid Level

Senior Analyst, Manager, Senior Manager

Responsibilities typically include the following:

- Forecasting
- Project management and organization
- Business development
- Report publication

Senior Level

Director or VP of Sales/Marketing/Intelligence/Strategy/etc

Responsibilities typically include the following:

- Project oversight
- People management
- Communications with leadership

Creating a CI Team in Life Sciences

If you've read this far, chances are you're looking to either improve your own CI team, or set up a new CI organization in your company. CI plays an integral part in the strategic decision making of leading life sciences companies, and significant investment is entirely worthwhile.

Our evaluation of how a CI team's maturity may impact a life sciences organization's annual revenue suggests that CI analysis is more likely to positively impact the company's market positioning and revenue when a CI professional is part of the decision-making team.

Want to test your CI team's maturity?

Take the CI Maturity Self-Assessment.

It's vital to keep in mind while building out your CI unit. We suggest a centralized approach to CI to leverage synergies and share resources, as opposed to a decentralized approach that would embed a CI professional in each therapeutic business unit.

In either case, whether centralized or decentralized, your entire organization should be bought into **creating a culture of CI**.

What Do I Need to Consider When Building a CI Function?

If you're building a CI function from scratch, there's a lot to consider. Here, we cover some of the key areas your organization must make critical decisions on.

If you need further guidance, it's worth considering **working with a Cipher consultant** to effectively set up your in-house CI function.

Use Appropriate CI Techniques

Start to practice the process of information gathering, validation, and analysis, report writing, dissemination of findings, and use of CI insights in strategic decision-making.

Invest in People

Identify individuals within your company with marketing, data analysis, and business analytics skills to organize a CI function that reaches into senior leadership.

Sources

Prioritize development of primary research techniques (sales analysis, customer interviews, and won/lost prospect discussion) while utilizing **secondary research** (public sources via the internet, press releases, etc.) to generate predictive analytics capabilities.

Systems

Develop and utilize a **knowledge management** portal to allow for storage and sharing of intelligence documents to specific groups.

Deliverables

Engage stakeholders across the entire organization using insights from product comparisons, **win/loss data**, predictive analyses, competitor profiles, strategic scenarios, wargaming analyses, etc.

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An Indispensable CI Partner

As a leader in the competitive intelligence industry for more than 25 years, Cipher offers a variety of resources for companies at all stages of CI maturity. We provide best-in-class service and CI support, with a focus on actionable insights. We've got experience working with the largest companies in the life sciences industry.

What can you expect when working with Cipher?

Not sure where to start with CI? At Cipher, we provide a range of competitive intelligence consulting services to provide you with valuable insights and support to evolve the way you compete.

Cipher

Our services include:

Strategic Advisory

Our experts will help your organization build top-notch CI capabilities. We apply government government intelligence practices and strategic thinking concepts to help you anticipate market and competitive developments.

Our team has plenty of Big-4 experience and know-how to help you build strong CI capabilities from the ground up. We'll help plan for uncertainty and disruption while mitigating competitive risks to your business.

Intelligence Generation

Competitive intelligence is an ongoing process, and you need iterative processes to help you gather and analyze data in real-time. We can help in all stages of the intelligence generation process, from information collection all the way through to information dissemination. Intelligence generation services include:

- Competitor Assessments
- Win/Loss Analysis
- Market Modelling
- Pricing Intelligence
- Monitoring & Alerts
- Battlecards
- Regular Reporting
- Due Diligences

Leadership Support

Your leadership needs the right information, and the techniques to effectively understand it, in order to make the best decisions for your organization.

We offer full access to **Knowledge360®**, ongoing support from our team, and leadership support across key functions like sales, marketing, and product. With custom tools and templates, as well as strategic support for major initiatives, you'll be able to make major decisions with a greater degree of confidence and clarity than ever before.

If you're ready to evolve the way you compete, schedule your free demo with our team to learn more about how Cipher and Knowledge360® will take your CI to the next level.