

0 Designed for Desire

A Cultural and Data-Driven Journey Through Sex Toy Evolution

1 1 Introduction: Method, Motivation and Scope

This project began with a lived observation and a lifelong curiosity. While working in the adult retail industry, I started noticing generational patterns in sex toy preferences. Younger women often chose toys designed for penetration, while older women consistently gravitated toward external stimulators. From these informal but recurring dynamics, two hypotheses emerged:

1. That women, regardless of sexual orientation, express a strong desire for penetrative pleasure;
2. That women's evolving needs and voices have played a central role in transforming the sex toy industry.

To validate or challenge these ideas, I launched a research project that merges **technological methods (web scraping, data visualization, generative AI)** with a **cultural and historical lens**, rooted in a critical but non-academic approach. My goal was not just to gather data, but to create a **readable, traceable and SMART-based exploration** that could interest both recruiters and readers passionate about the intersection of sexuality, identity, and innovation.

1.1 Specific

This study focuses on the **evolution of sex toy trends over time and across regions**, highlighting how product categories, target groups, and aesthetics have changed. Central to the inquiry is the role women have played as both consumers and innovators, reshaping a market once built for and by men.

1.2 Measurable

The project includes:

- An analysis of 3 major brands (Beate Uhse, CalExotics, Sh!), each with a legacy of female leadership and product design and an example of the avant-garde (Bad Dragon).
- Automated data extraction (bestsellers, usage categories, price comparisons).
- Inclusion of cultural studies and a 2,000-women survey led by a high-impact blogger.
- A complementary examination of newer phenomena like fantasy dildos (Bad Dragon), color symbolism, and cosmetic arousal creams.

Every product was evaluated for its usage (internal, external, couple) and classified by intended physical interaction (F, M, Couple), a choice made consciously, with awareness of its limitations.

1.3 Achievable

Technologies used include:

- requests, BeautifulSoup, and Selenium for web scraping
- pandas, matplotlib, wordcloud, and openpyxl for data manipulation and visualization

- text-based pattern analysis and AI-generated profiling for product categorization

Despite limited access to internal sales data or demographics, I gathered **public-facing and structured datasets** and turned them into analyzable insight.

1.4 Relevant

I chose this subject not out of trendiness, but personal belief. I see sex toys as a **powerful symbol of freedom**, bodily, psychological, and cultural. While I don't label myself as a feminist, I feel deep pride in women's achievements and concern for the ongoing inequalities we face. This project, in its own way, is my contribution to a larger shift in how sexuality, tech, and gender intersect today. This is not just a data project, it's a reflection on autonomy, storytelling, and how design can shape desire.

1.5 Time-bound

The study spans from historical and legal milestones (including Etsy's 2024 policy change) to current market strategies.

To better understand this transformation, we begin with a brief cultural and legal history of sex toys.

2 2 Historical & Cultural Background

To grasp how sex toys have evolved into tools of empowerment and design, we must first understand their long and complex cultural lineage. This section presents a brief overview of the historical and cultural context surrounding sex toys, with a focus on the origins, meanings, and uses of the **dildo**, one of the oldest known sexual devices. Content is drawn primarily from webscraping Wikipedia's article on Sex toy (particularly the History and Legal sections), complemented by other historical and etymological sources.

The **etymology** of the word *dildo* has long been debated. According to the third edition of the Oxford English Dictionary (2018), the term likely derives from **nonsense syllables** used in early modern English ballads — not unlike the whimsical phrasing in "hey diddle diddle." These playful sounds served as euphemisms for sexual themes. One such ballad, *The Maid's Complaint for Want of a Dil Doul*, uses "Dil Doul" to refer to a man's penis and dates back to the 17th century. The song was cataloged in the private library of **Samuel Pepys**, a 17th-century English diarist and collector of popular ballads.

Key Terms Used in This Study

Term	Definition
Dildo	A non-vibrating object designed for penetration. Often phallic, made of silicone, rubber, glass, etc. Does not contain electronic components.
Vibrator	A toy with a motor that produces vibrations to stimulate erogenous zones. Can be internal, external, or hybrid; varies widely in shape and function.
Masturbator	Typically penis-focused, such as sleeves or strokers. Broader use includes any solo-use device for genital stimulation.
Sex Toy	An umbrella term for all objects enhancing sexual pleasure: dildos, vibrators, plugs, masturbators, BDSM items, etc.

These definitions reflect the language used in contemporary product descriptions and market analysis.

2.1 2.1 Timeline of Sex Toys - Historical and Legal Milestones

The timeline below highlights key milestones in the material and cultural history of sex toys. From early symbolic artefacts to modern innovations, these moments reflect how pleasure, gender, and taboo have been negotiated across time and cultures.

Period	Event / Artefact Description	Location	Notes
~30,000 BCE	Bâton de commandement, possibly used as sex toy (phallic-shaped artefacts)	Europe (Paleolithic)	Considered symbolic, debated use
~13,000–19,000 BCE	Double-ended dildos, early penetration tools	Various	Rare archaeological finds
~3000 BCE	Erotic depictions with dildos in wall paintings	Ancient Egypt	Used in varied contexts
~2000 BCE	Bronze phalluses found on a tomb	China	Symbols of pleasure and status
~2000 BCE	16 cm wooden phallus, originally misclassified as a darning tool	Roman era	Shows signs of wear, suggesting repeated use
Pre–5th century BC	Breadstick-shaped dildos ("olisbokollikes"); leather dildos stuffed with wool, oiled	Ancient Greece	Some pottery depicts solo or group use
Medieval times	Plants like the "Cantonese groin" used to fashion enlarged, usable dildos	Europe	Often referenced in erotic texts
15th century	Leather, wood, and stone dildos	Italy	Used for solo or partnered play
15th century	Lacquered wooden dildos sometimes buried with women	China	Suggests symbolic value and ownership
1590s	First literary mention of a glass dildo (<i>The Choise of Valentines</i>)	England	Poem by Thomas Nashe
17th–18th century	Erotic shunga art shows women purchasing dildos	Japan	Made of buffalo horn; openly depicted
18th century	Pair of French wooden dildos ("Travel Godermiche") created	France	Stored in a leather-lined case
Late 19th century	Wooden dildos (single and double-ended) documented in ethnographic research	Zanzibar	Illustrated by Haberlandt
Late 1880s	Electromechanical vibrators invented by Joseph Mortimer Granville	England	Originally for medical use
1947	Beate Uhse publishes <i>Schrift X</i> , a contraceptive information magazine	West Germany	Promoted Ogino-Knaus method
1962	Beate Uhse opens the world's first sex shop	Germany	Pioneering move toward retail normalization
Late 1960s	Hitachi launches the Magic Wand	Japan	Marketed for muscle pain; adopted for sexual use
Late 1960s	Feminist Betty Dodson leads masturbation workshops using the Magic Wand	New York City	Milestone for sex-positive feminism
1992	Sh! is founded by Kathryn Hoyle and Sophie Walters	London	Men allowed only when accompanied; cultural shift in retail
1994	Susan Colvin founds CalExotics, first woman-owned sex toy company	USA	Focus on color, waterproof design, and quality silicone

Period	Event / Artefact Description	Location	Notes
2002	A new era of adult online toy shopping begins: Lovehoney is born	England	Sexual happiness, mainstream appeal
2008	Bad Dragon is founded	USA	Fantasy-themed, customizable toys; strong online community
2010	Auction of 18th-century wooden dildos for £3,600	Essex, UK	Brought historical artefacts into public view
2016	Internet-connected sex toys shown vulnerable to cyberattacks	Italy	Exposed by Trend Micro; raised privacy and security concerns

2.2 Notable Historical Artefacts : a Visual History of Pleasure

Phallic objects have been found in many ancient cultures across the globe, serving as ritual symbols, fertility charms, or perhaps simply as intimate tools. While historical interpretations are often tentative, the physical traces left behind offer a compelling visual history of human sexuality, and its material imagination providing powerful evidence of historical engagement with pleasure.



Germany, 28,000 BCE
A carved siltstone object found in Hohle Fels Cave, interpreted by archaeologists as one of the oldest known dildos.



China, Han Dynasty (c. 200 BCE)
Bronze and jade phallic objects discovered in elite tombs. Their exact function remains debated, but theories range from symbolic guardians to sexual implements.



Roman Britain (Vindolanda Fort)
This wooden phallus, discovered near Hadrian's Wall, may have served as a symbolic offering, a torture instrument, or a practical object.

2.2.1 2.2.2 “Travel Godermiche”: A Collector's Treasure

In 2010, a remarkable pair of 18th-century sex toys, likely French, was sold at Brentwood Antiques Auction in Essex, UK, for £3,600.

The items, carved from wood and stored in a fitted, leather-lined case adorned with fleurs-de-lys, were listed under the rare title "*Travel Godermiche*", a historic term used to describe phallic instruments.

"You might laugh but it's a good opportunity for investment. You won't see another one in a long time."

— Wendy Wood, Auctioneer

Described as *extraordinary and exceptionally rare*, these objects hold significance not only as curiosities but as cultural artefacts, testimonies to centuries of discreet pleasure.

Source: [BBC News – Historic sex toys sold for £3,600 at Essex auction](http://news.bbc.co.uk/2/hi/uk_news/england/essex/8589766.stm)
(http://news.bbc.co.uk/2/hi/uk_news/england/essex/8589766.stm).



2.3 Timeline: Legal and Cultural Milestones

The legal history surrounding sex toys reflects broader societal attitudes toward sexuality, morality, and gender.

In 1957, Malaysia introduced explicit bans on the sale and import of sex toys, framing them as threats to public morality. Similar prohibitions appeared in South Africa in 1969, primarily targeting lesbian sexuality, and in several U.S. Southern states throughout the late 20th century. However, a notable cultural shift began in Europe.

In 1975, West Germany legalized pornography, fostering a new era of open erotic commerce and supporting pioneers such as Beate Uhse. This change marked the beginning of broader normalization of sexual expression in Western Europe.

In the early 2000s, the legal landscape in the United States also began to change: while Alabama reaffirmed its sex toy ban in 2007, Texas overturned its ban in 2008, citing constitutional privacy rights. Today, while countries like India and Zimbabwe still criminalize sex toy possession, others have embraced legal and cultural acceptance, often navigating restrictions creatively as seen in Japan's design adaptations to circumvent obscenity laws.

These developments illustrate how the acceptance of sex toys follows larger trends of liberalization, resistance, and cultural negotiation, but they also remind us that objects themselves are never neutral.

While the phallic form has been historically central, its meaning varies greatly across time and context from ritual object, to pornographic replica, to empowering tool of self-defined pleasure.



Ancient Greece
Pottery art



A strap-on dildo being used by two women.
Lithograph from *De Figuris Veneris* (1906) by Édouard-Henri Avril

For example, in 15th-century China, some women were reportedly buried with intricately crafted wooden dildos. This suggests that sex toys held symbolic value beyond functional pleasure. They may have represented a part of the self, personal identity, or even spiritual autonomy, a form of erotic continuity beyond life. Rather than reinforcing male-dominated narratives, such artefacts can point to private domains of agency, often overlooked in broader historical accounts.

This duality invites us to rethink simplistic interpretations: the sex toy is not a passive object but an evolving cultural artifact, simultaneously shaped by and shaping ideas of gender, sexuality, and power; **the dildo, rather than being strictly patriarchal or feminist, is a contested symbol shaped by its cultural moment.**

Period	Legal Event or Change	Location	Notes
1957	Sexual Offences Act prohibits sale/import of sex toys	Malaysia	Ban in place
1969	Immorality Amendment Act bans manufacture and sale of sex toys (aimed at lesbians)	South Africa	Later repealed in 2007
1975	Legalization of pornography, facilitating sexual culture expansion	West Germany	Context for Beate Uhse's business boom
1996	Breast Cancer Charity refuses money raised through catalogue sales from Sh!	England	"A SEX SHOP!" '...no, sorry, we can't accept it'. Luckily, specially for cancer's patients, Breakthrough Breast Cancer thinks in a different way
2007	Alabama law upholding sex toy ban confirmed; considered no "fundamental right to orgasm devices"	Alabama, USA	Strict restriction maintained
2007	South Africa repeals ban on sex toys with Criminal Law (Sexual Offences and Related Matters) Amendment Act	South Africa	Legalization
2008	Texas ban on sex toys overturned as unconstitutional (14th Amendment, privacy rights)	Texas, USA	Legalization through courts
July 2024	Etsy ban the sale of sex toys as well as "printed or visual materials" that exist for "the purpose of sexual arousal or stimulation" (https://www.theguardian.com/business/article/2024/jul/11/etsy-sellers-ban-sex-toys-betrayal)	England	The ban includes old Playboy issues and vintage adult magazines, and anything printed with sexual slogans related to "daddy" or "mommy"
Present	Sale/possession of sex toys criminalized as "obscene" under Section 292	India	Ban in force
Present	Sex toys in Japan designed to look like animals or cartoons to bypass obscenity laws	Japan	Legal through indirect means
Present	Import/possession of sex toys considered obscene and fined or punished with prison	Zimbabwe	Active strict ban

3 3 Quantitative Insights: Beate Uhse

Beate Uhse, one of the oldest and most iconic names in the European erotic market, offers a unique lens into consumer behavior. With a catalog that blends affordability, tradition, and accessibility, its product range provides valuable insight into popular preferences and evolving desires.

In this section, we explore the company's top-selling and most-loved vibrators, analyzing their characteristics through coded dimensions such as usage, target, materials, price range, and technical features. The goal is to highlight purchasing patterns and emotional resonance in the context of broader market trends.

All product visualizations use a shared code system:

Legend

- F: Feminine
- M: Masculine
- C: Couple
- Int: Internal
- Ext: External
- Sizes: S, S+, L, XL
- Materials: Silicone, ABS, TPR, etc.

3.1 3.1 Methodological Approach: Exploring What Sells vs. What's Loved

To understand what drives consumer behavior, this section contrasts two curated product groups: Beate Uhse's **bestsellers**, representing items most frequently purchased, and its **most loved vibrators**, highlighting user-rated favorites.

While the former reflects trends driven by accessibility, price, or mass appeal, the latter offers insight into longer-term satisfaction, quality preferences, and emotional connection.

The decision to focus specifically on **vibrators**, rather than dildos, stems from observed product availability: **dildos were notably absent from Beate Uhse's bestsellers** list. This aligns with findings from the study *Global Web Trends Analysis of Sex Toys* by Müslim Doğan Değer and Burak Akgul, published in *Sexual Medicine*, which analyzed Google Trends data from 2009 to 2023. The study revealed a **sustained rise in interest for vibrators and masturbators**, alongside a **decline in interest for dildos since around 2016**.

While the study used search behavior as its metric, our analysis draws directly from Beate Uhse's online offerings, providing a complementary, product-based view.

By comparing these product through visualizations sets across key variables (use, target, materials, price, and charging method) we aim to uncover patterns that explain not just what sells, but what resonates.

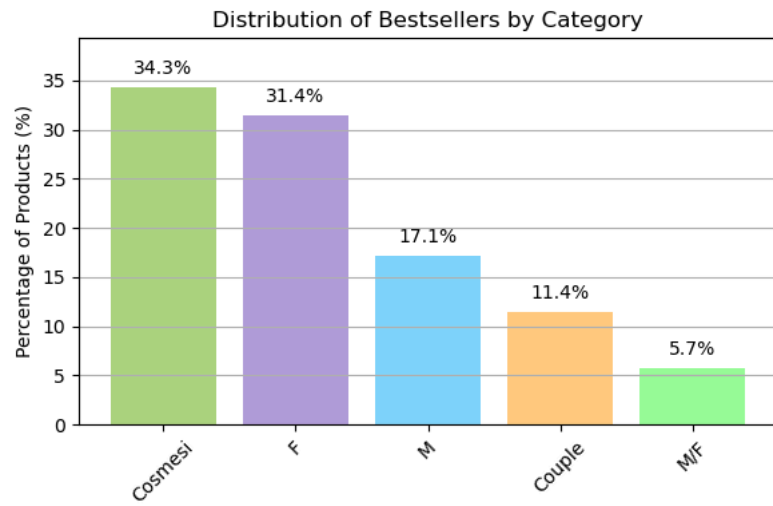


Figure 1: Distribution of Bestsellers by Category



Figure 2: Price Distribution – Bestsellers vs. Most Loved Vibrators

Figure 2 reveals that most-loved vibrators tend to fall into a higher price bracket than bestsellers. This suggests that while consumers may initially purchase lower-cost items, long-term satisfaction may be tied to more advanced or premium models.

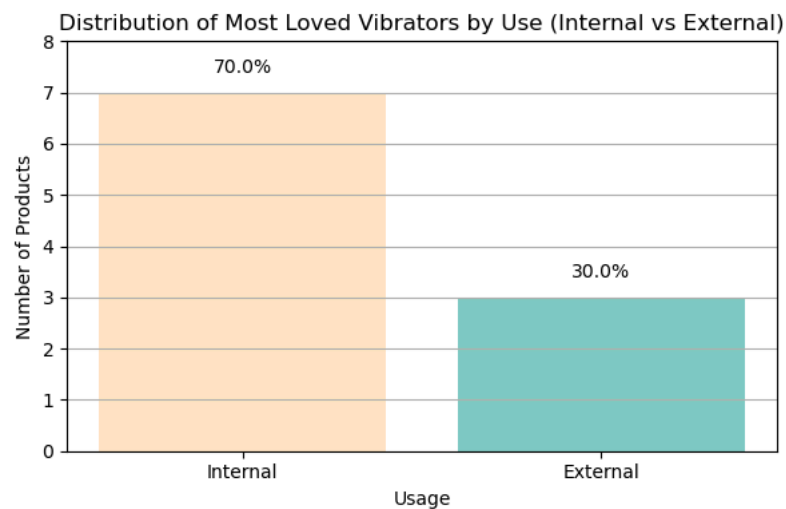


Figure 3: Usage (Internal vs External) in Most Loved Vibrators

Figure 3 reveals a notable dominance of internal vibrators among the most loved products. This contrasts with common assumptions about external stimulation being more popular or satisfying. It suggests that, despite a cultural emphasis on clitoral toys, many users report deeper satisfaction with internal-use models when evaluating their favorite devices.

3.2 Technology and Materials

In this section, we compare how material choices and technological features influence both popularity and user satisfaction.

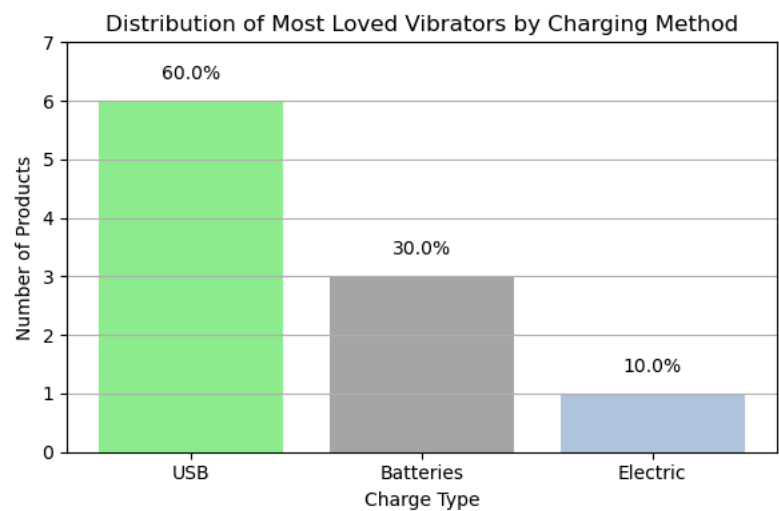


Figure 4: Distribution of Most Loved Vibrators by Charging Method

As shown in Figure 4, with **60% of the most loved vibrators using USB charging**, it's clear that modern users value convenience, sustainability, and ease of use, pushing traditional batteries or electric plug-ins into the background.

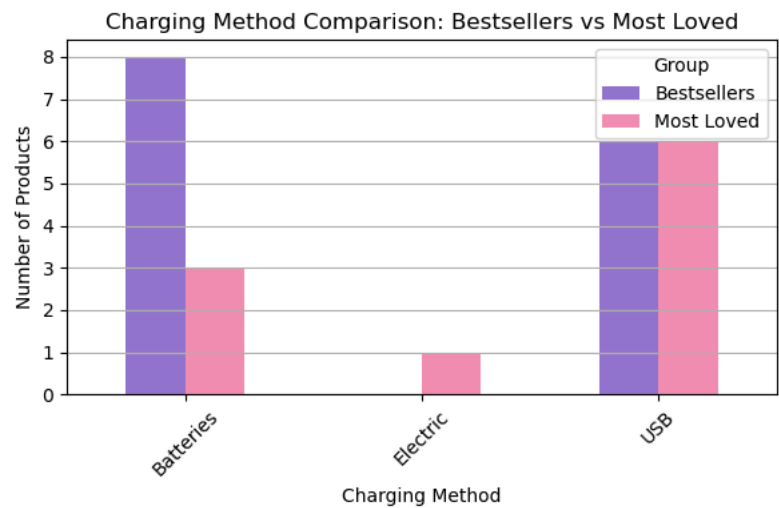


Figure 5: Charging Method Comparison - Bestsellers vs Most Loved

Figure 5 compares charging methods between bestselling and most loved vibrators. While battery-powered toys still make up a notable portion of bestsellers, USB-rechargeable models dominate among the most appreciated products, suggesting a growing consumer preference for tech-savvy and sustainable options.

Insight: Rechargeable products are more appreciated over time suggesting that products users grow to love often differ from their initial, possibly more affordable, purchases. Accessibility and lower price may drive initial sales.

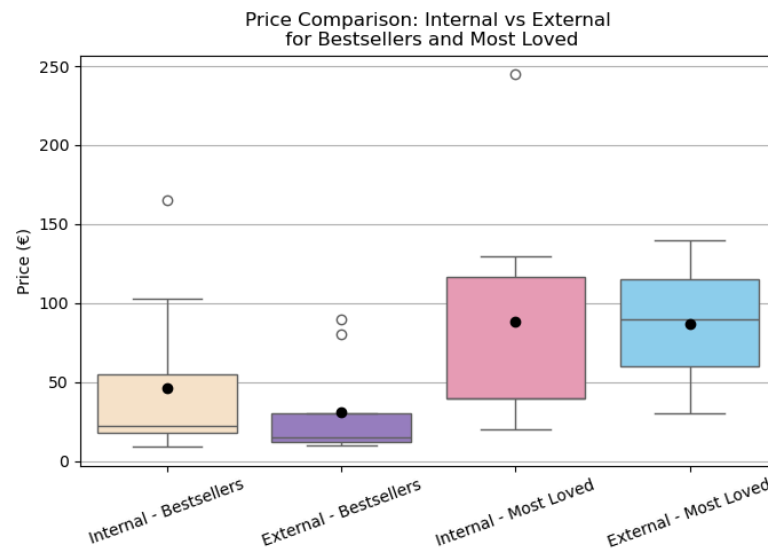


Figure 6: Price Comparison Internal vs External Use in Most Loved and Bestsellers

Figure 6: Price Comparison – Internal vs External Use in Bestsellers and Most Loved Vibrators

The boxplot above reveals several key insights:

- Among **bestsellers**, internal vibrators dominate in number, but are also available at a broad range of prices including many affordable, entry-level options.
- External-use vibrators in the **bestseller group** tend to cluster in the lower price range, reinforcing the idea that consumers often choose them as budget-friendly or add-on items.
- Among **most loved** vibrators, the distinction between internal and external use is less pronounced both categories feature higher average prices and fewer low-cost options.
- Notably, **external vibrators in the most loved group** show a strong preference for premium models. This suggests that when consumers choose external toys, they are willing to invest more possibly due to expectations around precision, material quality, or unique features like air pulse technology.

In short, while internal vibrators dominate bestseller volume, the **most telling contrast lies in how external toys are valued**: budget-friendly when first bought, but premium when truly appreciated.

3.2.1 Summary Comparison – Beate Uhse Vibrators: Bestsellers vs Most Loved

Feature	Bestsellers	Most Loved
Use	Mixed, but external toys more common	Mostly internal stimulation
Power	More variety: battery-powered and hybrid models	Predominantly USB-rechargeable
Price Point	Lower average and median price	Higher average and median price

Feature	Bestsellers	Most Loved
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Insights on Beginner vs. Advanced Use This pattern reflects not just a product choice but a **personal evolution: from accessibility and experimentation to awareness, preference, and long-term enjoyment.**

4 4 Comparative Market Study: Europe & Beyond

4.1 4.1 Use Frequency, Preferences, and Satisfaction

To understand how sex toy use and its perceived impact vary across regions, we draw on a large-scale, cross-sectional study involving 11,944 participants from six European countries: Denmark, Sweden, Norway, Finland, France, and the United Kingdom. [The study \(https://doi.org/10.1080/00224499.2024.2304575\)](https://doi.org/10.1080/00224499.2024.2304575) explored ownership patterns, contexts of use, and their correlations with sexual, relationship, and life satisfaction.

- **Ownership:** Over 50% of participants in all countries reported having owned at least one sex toy.
- **Most commonly owned items:** Dildos and vibrators, followed by handcuffs, penis rings, and anal toys.
- **Usage context:** 55–65% used toys with a steady partner; 10–15% with casual partners.
- **Country differences:**
 - **France** had the lowest toy ownership.
 - **UK** had the highest vibrator ownership (approx. 80%).

Satisfaction Scores (Average)

Country	Sexual Sat.	Life Sat.	Relat. Sat.
France	3.87	3.57	3.88
Denmark	3.73	3.50	3.96
Sweden	3.69	3.52	3.92
UK	3.58	3.40	4.04
Finland	3.58	3.38	3.80
Norway	3.59	3.40	3.79

Note: France ranks highest in sexual satisfaction, while the UK leads in relationship satisfaction. Nordic countries are tightly clustered across all dimensions.

These findings challenge cultural stereotypes. While ownership and use patterns differ slightly, satisfaction outcomes are relatively consistent — pointing to:

- A growing alignment of sexual attitudes in Western Europe;
- The normalization of sex toys as part of everyday erotic culture;
- The influence of e-commerce and discreet shipping on access.

France's case is particularly striking: despite low ownership, it leads in sexual satisfaction, suggesting that erotic comfort isn't determined solely by product use. Meanwhile, the UK's high ownership and strong relationship scores may reflect a greater openness to shared erotic practices.

4.2 Market Insights

The European sex toy market shows strong signs of growth, diversification, and cultural adaptation:

- According to Straits Research, the market is projected to grow from 12.44 billion in 2024 to **21.70 billion by 2033**, with a **CAGR of 7.2%**.
- Products for women currently make up **48% of the market**, and this segment is expected to grow at a **7.67% CAGR** by 2030.
- Distribution is dominated by **e-commerce**, which accounted for over **60% of sales in 2021** and is forecasted to increase steadily (7.45% CAGR by 2030).

Top national markets in Europe include:

- **Germany, Italy, France, the UK, and Denmark.**
- **Spain** is also a global top buyer, and Southern European countries (Spain, Italy, Greece, Portugal) report a **34% openness rate** toward exploring novel erotic practices — slightly higher than their Northern counterparts.

Germany, in particular, shows strong adoption rates:

- **52%** of adults use sex toys during partnered sex.
- **45%** report using them during solo masturbation (source: Grand View Research).

Search and digital behavior reflect further regional interest:

- A report by TechySex.com ranks **Sweden** highest in sex toy-related online searches, followed by **Denmark**, the **UK**, and **Norway**.

Lastly, a 2023 study published in *Sexual Medicine* based on Google Trends data (2009–2023) found:

- **A sustained rise in interest for vibrators and masturbators.**
- **A decline in dildo-related searches** since around 2016.

These combined insights illustrate both growing consumer demand and a shift toward more technologically advanced, self-care-oriented products.

4.3 Interpretation Notes

When we triangulate academic research, market data, and digital behavior, a number of regional patterns emerge:

- **Nordic countries** (e.g. Sweden, Denmark) show consistently high levels of both market engagement and online interest. This points to a cultural openness and digital fluency around erotic tools.

- **Germany** reflects a mature, normalized market with high rates of toy use in both solo and partnered contexts — likely supported by long-standing retail infrastructure and less social stigma.
- The **UK** stands out for its high vibrator ownership and top-ranking relationship satisfaction, possibly indicating greater openness to shared pleasure practices within couples.
- **Southern Europe** (e.g. Spain, Italy, Greece) demonstrates strong buying power and cultural willingness to explore new erotic experiences, challenging assumptions of traditional conservatism.

Across all regions, one trend is unmistakable: the growing popularity of technologically sophisticated toys such as **air pulse stimulators**, **wand massagers**, and **multi-function devices** reflects a cultural shift toward **innovation, self-care, and refined eroticism**.

In sum, while what people buy may vary by culture, **how** they use these products, and the values behind those choices, tell us even more about evolving attitudes toward intimacy,

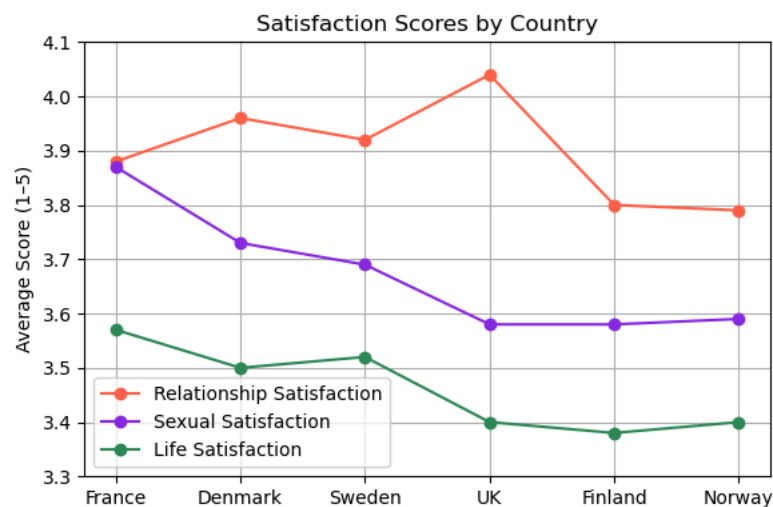


Figure 7: Satisfaction Scores by Country

Figure 7 visualizes **average satisfaction scores across six European countries**. While the UK leads in relationship satisfaction, France ranks highest in sexual satisfaction. The Nordic countries cluster closely, suggesting consistent patterns of moderate-to-high satisfaction across all dimensions. These scores match the patterns observed in the earlier table (Section 4.1), reinforcing both regional distinctiveness and shared trends.

4.4 4.4 Generational Patterns in Sex Toy Use

Although no direct age data is available from Beate Uhse's online shop, both academic research and product-level observations suggest a clear generational pattern in sex toy consumption.

4.4.1 What the research says

A large-scale study across Denmark, Norway, Sweden, Finland, France, and the UK (*Do Sex Toys Make Me Satisfied*), found that **younger people are significantly more likely to use sex toys**. Age was the strongest predictor of usage, especially for solo play. The same study links younger usage to greater sexual openness, digital access, and lower stigma.

4.4.2 What the products show

From the webscraped extracted bestseller data, we observe that:

- The **most sold toys** are low-cost (mostly under €25)
- They are largely **internally focused** (e.g. classic vibrators, plugs)
- Many are marketed as **beginner-friendly** and battery-operated
- Brands like *EasyToys* dominate this segment

By contrast, the **most loved toys**, as reflected in reviews and personal observation, tend to:

- Cost significantly more (often €50–140)
- Use **advanced technology** (USB charging, air pulse, wand motors)
- Are often **external toys**, especially clitoral stimulators
- Prioritize **material quality** (premium silicone, ergonomic shapes)

4.5 4.5 Interpretation Notes

This divide likely reflects **two overlapping trends** inferred based on product characteristics, price sensitivity, and known user behavior trends:

Segment	Likely Age Group	Motivation		Behavior
Bestsellers	18-30	Accessibility		First-time users, gift purchases
Most Loved	30+	Experience & Quality	Self-knowledge, repeat buyers, design-savvy	

In essence:

- **Youth buys more** - driven by price, accessibility, and curiosity
- **Experience loves better** - driven by sensuality, quality, and control

5 5 Product Categories & Emerging Trends

5.1 5.1 Qualitative Insights: Material Innovation

The development of modern materials has allowed dildos to diversify in form, color, and texture, making them more accessible and tailored to different preferences. Modern sex toys increasingly prioritize not only safety and aesthetics, but also environmental impact and user-specific ergonomics, features enabled by new-generation materials.(¶6).

Source: Wikipedia – [Sex toy > History \(https://en.wikipedia.org/wiki/Sex_toy\)](https://en.wikipedia.org/wiki/Sex_toy)
Extracted from scraped_data.json , paragraphs 1–9.

5.2 5.2 Case Study: CalExotics, Feminine Innovation and Firsts

As the **first sex toy company founded and operated by a woman** (1994), and **global leader in innovation**, there is a long list of accomplishments attributed to CalExotics. Many of these have become industry standards, with their roots traced back to the pioneering spirit of Susan

Colvin and her team.

CalExotics was the first to...

- Introduce feminine colors to intimate massagers
- Release a waterproof line of toys
- Introduce remote control egg-style intimate massager
- Offer manufacturer warranties for intimate products
- Have an all-women product development team
- Create 100% premium silicone intimate products
- Introduce rechargeable rabbit-style vibrators
- Manufacture a talking vibrator
- Create pulsating intimate massager made in the USA
- Bring an eco-friendly, solar-powered intimate toy to market
- Design butterfly-style intimate massagers
- Manufacture a wireless charging massager with built-in sanitizing capabilities

Together, these milestones illustrate CalExotics' role in shifting the industry toward inclusivity, personalization, and technological advancement especially for women-led pleasure.

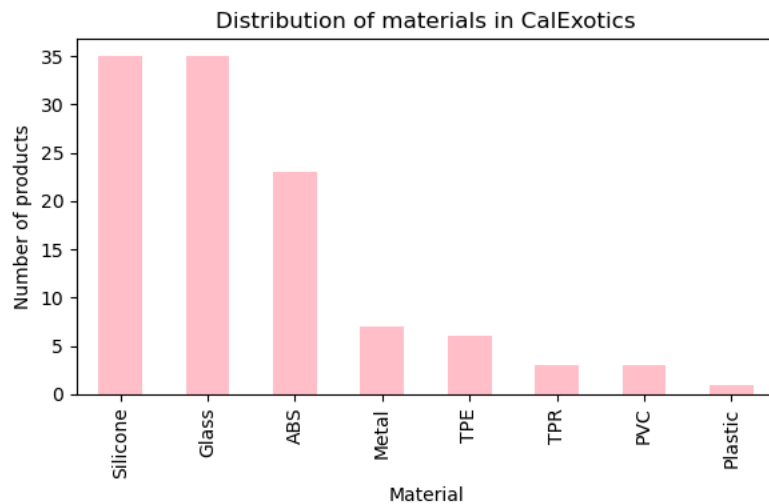


Figure 8: Distribution of materials in CalExotics

Figure 8 shows that CalExotics heavily favors premium materials such as medical-grade silicone and ABS plastic, while avoiding lower-end compounds like jelly or porous rubber. This aligns with the brand's commitment to safety, durability, and high-quality user experience.

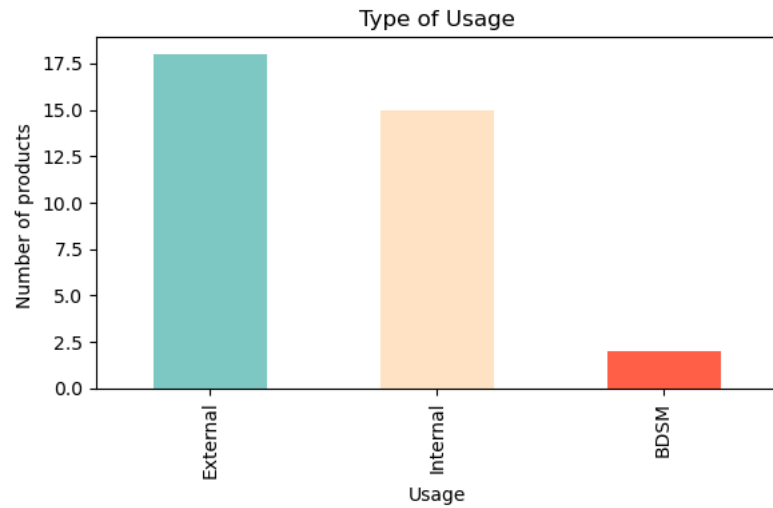


Figure 9: Type of Usage

Figure 9 categorizes CalExotics products by usage type: **Internal toys remain the dominant group**, but there is significant representation of external and couple-oriented toys reflecting a product line that accommodates a range of preferences and sexual contexts.

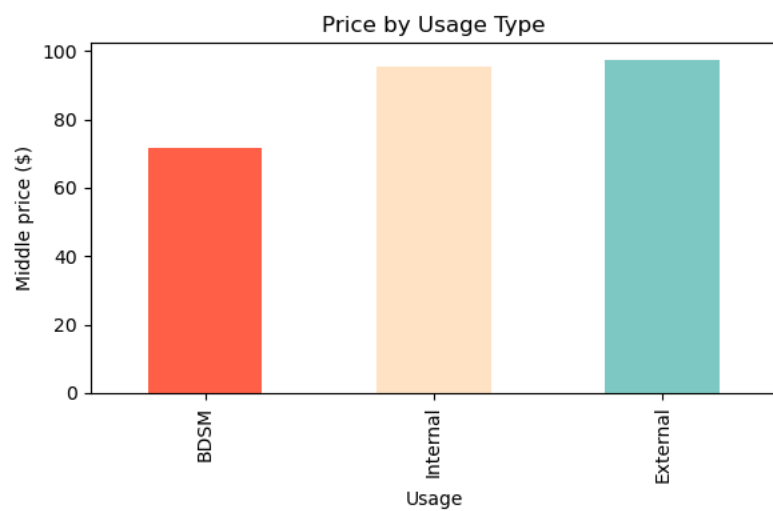


Figure 10: Price by Usage Type

Figure 10 shows the median price of CalExotics products by usage type: **external toys are slightly more expensive than internal ones**, while BDSM items have a noticeably lower median price. This may reflect simpler design in BDSM accessories or lower-cost entry products, compared to the often tech-enhanced features found in external and internal vibrators.

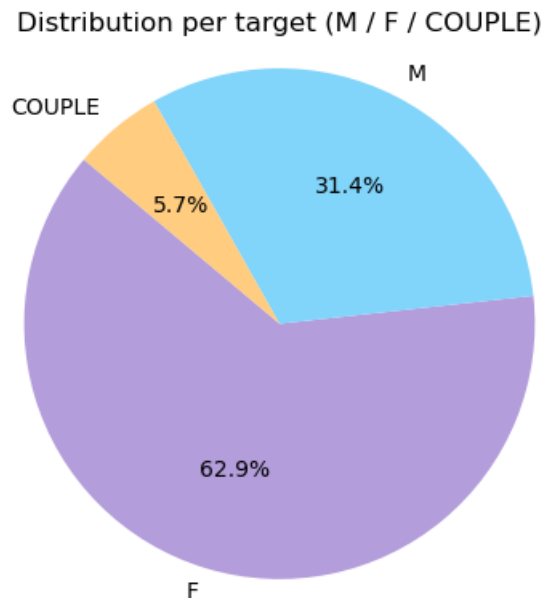


Figure 11: Distribution per target (M / F / COUPLE)

Figure 11 illustrates the distribution of CalExotics products by target audience. Toys designed for female users dominate the catalog, while couple-oriented products are less frequent. Items explicitly marketed toward male users make up a smaller share, suggesting either a narrower product range or more gender-neutral positioning in this category.

5.3 5.3 Brand Comparison: CalExotics vs. Beate Uhse

To explore how product positioning and branding strategies vary across companies, **the table below compares the bestselling items from CalExotics and Beate Uhse.** While both target a broad consumer base, their catalogs differ significantly in terms of audience focus, pricing, technology, and cultural tone.

This comparison draws from previously scraped product data and bestseller selections.

Feature	CalExotics (bestsellers)	Beate Uhse (bestsellers)	Interpretive Note
Target: Female (F)	31.4%	62.9%	Beate Uhse shows a stronger focus on a female audience
Target: Male (M)	17.1%	32.4%	Beate offers more male-oriented products
Target: Couples	51.5%	Marginal	CalExotics is heavily focused on shared, couple-oriented products
Cosmetics	(not in bestsellers)	(34% of sample)	CalExotics sells lubricants, but none appear among bestsellers
Average Price	Higher	More accessible	Positioned mid-to-high vs. more entry-level approach
Technology	High (Bluetooth, app-compatible, rechargeable)	Lower or absent	CalExotics strongly emphasizes innovation
Main Materials	Silicone dominant	Silicone + mix of others	Both favor silicone; CalExotics shows more consistency

6 6 Partnered vs. Solo Use

Chapter 6 explores how sex toys are used in solo versus partnered contexts, and how product design, marketing, and social narratives shape those choices. This iconic ad from Sh! (a brand founded to champion women's pleasure) captures the spirit of solo empowerment.



Our first print ad

Sh!: "Pleasure is power."

"We claim our right to pleasure. In doing so, we become revolutionists who can take on the world."

6.1 6.1 Sh! - Reclaiming Pleasure Beyond the Phallus

When Kathryn Hoyle co-founded Sh! in the early 1990s, the mainstream sex toy industry was still flooded with enormous, phallic replicas—tools designed more for spectacle than genuine female pleasure. "Everything was dick-shaped," Hoyle recalls. "Because all women's pleasure is at the end of a dick." But Sh! was born out of a different scene, London's lesbian S&M community, and carried with it a bold, disruptive ethos: that women, queer people, and anyone with a vulva deserved pleasure on their own terms.

From the start, Sh! rejected toys that mimicked genitals. "We're saying toys aren't replicas or replacements for anything. They're toys!" Hoyle insists. Their shelves filled instead with sleek, colorful, and unapologetically unrealistic designs, joyful tools to explore pleasure solo, without shame or scripts. At a time when clitoral stimulation was largely ignored, Sh! prioritized it. "There were very, very few toys we actually wanted to stock, so we started producing them. Since then, there has been more shift towards toys for women's pleasure... the focus on the clitoris has gone way up."

More than a boutique, Sh! became a sanctuary. Customers who had survived sexual trauma, struggled with vaginismus, or lived through cancer found in Sh! not just products, but healing. One woman wrote to share how her visit helped her reclaim her body after rape—something years of therapy hadn't managed. Although the physical store in Hoxton closed during the COVID-19 pandemic, Sh! continues to thrive online, offering not just products but also digital consultations, educational blogs, and ongoing support through its website and campaigns.

In a world still obsessed with “penetration as sex” and “everything else as foreplay,” Sh! challenged the script. It invited people, especially women, to center their own needs, whether partnered or alone. “If I had one wish,” Hoyle says, “I would get rid of the concept of foreplay”. Because at Sh!, pleasure itself is always the main event.

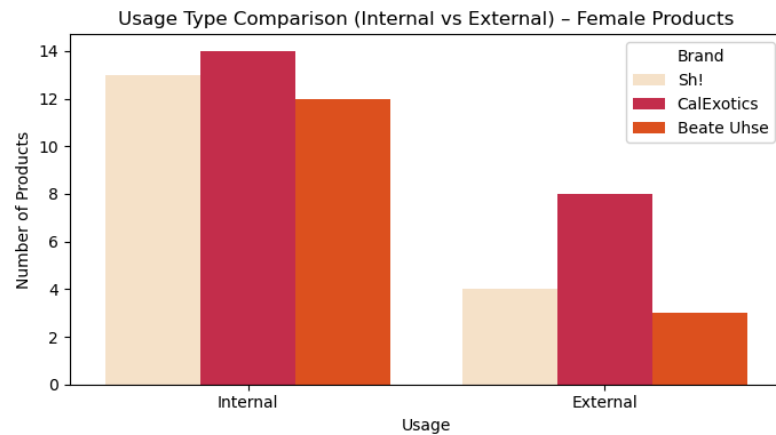


Figure 13: Usage Type Comparison (Internal vs External) – Female Products

Figure 13 compares internal and external toy types in female-targeted products, highlighting differences between bestsellers and most loved items.

The distribution of usage types shows that **internal products dominate across all three brands**. Sh! and Beate Uhse exhibit similar ratios of internal to external toys, while CalExotics leans more heavily on external-use items, resulting in a more balanced profile.

Note: Counts are based on bestsellers products listed online and are not normalized.

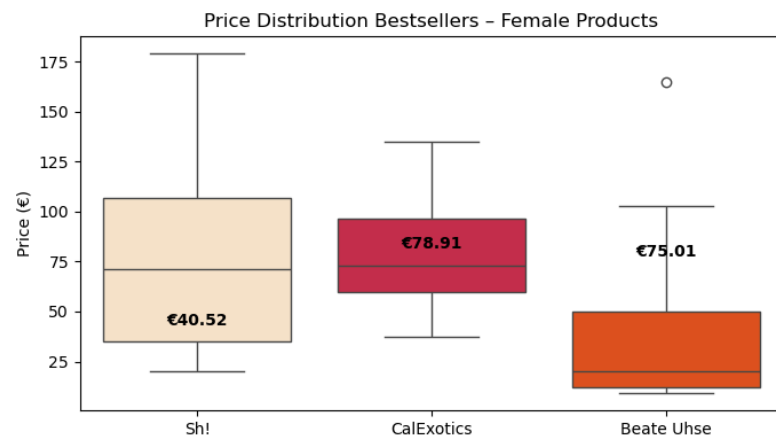


Figure 14: Price Distribution Bestsellers – Female Products

Price Distribution - Female Products

This box plot shows the price distribution of female-targeted products across the three brands.

- **Sh!** features the lowest median price (€40.52), a wider overall range, and a few standout high-end items.
- **CalExotics** centers around a higher median (€78.91) with a narrower, more consistent price spread suggesting a mid-premium positioning.
- **Beate Uhse** offers a slightly lower median (€75.01), but a strong concentration of very low-cost products.

Interestingly, despite these differences in pricing, both Sh! and Beate Uhse show similar proportions of internal-use products. This raises the question of whether internal/external orientation correlates with pricing strategy or a younger target audience. Further user data would be needed to confirm or reject that hypothesis.

7 7 Visual and Simbolic Design: Bad Dragon, Erotic Escapism Beyond the Human

In recent years, a growing segment of the sex toy industry has radically redefined the aesthetics of pleasure. Moving beyond anatomical realism, brands like Bad Dragon, Odyssey Toys, and numerous queer-friendly artisans on platforms like Etsy have embraced fantasy, sci-fi, and monster-inspired designs. These toys are not only objects of desire, but also playful provocations, challenging normative expectations of sexuality, anatomy, and gender identity.

Founded in 2008, Bad Dragon is a U.S.-based company that designs and manufactures fantasy-themed sex toys inspired by mythical creatures, sci-fi beings, and imagined anatomies. Unlike mainstream brands that strive for realism or clinical elegance, Bad Dragon fully embraces erotic imagination, offering customizable, handcrafted toys that cater to personal fantasy, roleplay, and subcultural expression.

While often associated with the furry community and other niche fandoms, Bad Dragon’s appeal goes beyond labels: its products speak to anyone seeking to explore pleasure beyond normative design. Each item is hand-poured in high-quality silicone, with options for color marbling, size variation, and added features like suction cups or ejaculation capabilities.

More than a brand, Bad Dragon has become a symbol of deviant creativity where toys are not substitutes for the human body, but bold statements of identity, agency, and erotic storytelling.

7.1 7.1 Fantasy Typologies and Their Audiences

Typology	Description / Style	Primary Audience
Mythological Creatures	Dragons, demons, gods; exaggerated ridges, scales	Queer/kink communities, fantasy fans
Aliens / Sci-Fi Forms	Smooth, glowing, tentacled, non-anatomical shapes	Sci-fi fans, gender non-conforming users
Animalistic Forms	Canine, equine, tentacle-based or hybrid species	Furries, kink/BDSM users
Fandom-Inspired	Based on D&D, hentai, fanfiction characters	Online fan communities, collectors
Roleplay Tools	Suction cups, firmness levels, ovipositors	Immersive roleplayers, kink users

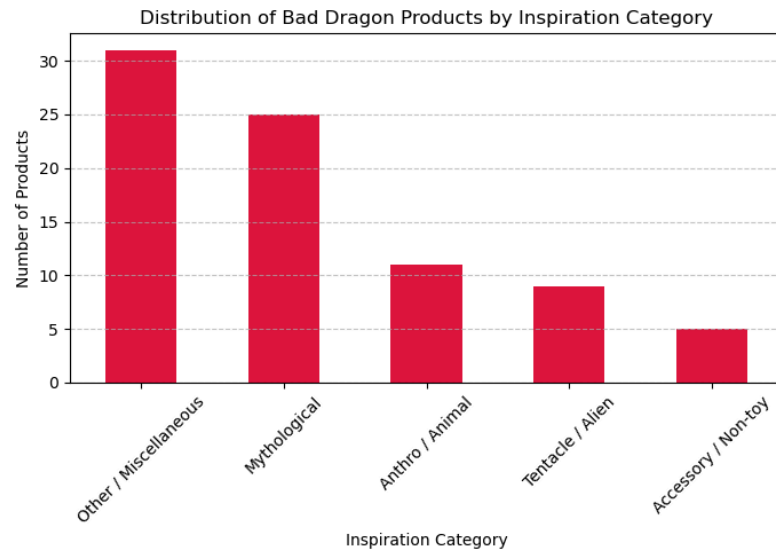


Figure 15: Distribution of Bad Dragon Products by Inspiration Category

Figure 15 shows that Bad Dragon’s catalog is dominated by mythological and anthro-inspired toys, followed by tentacle/alien designs. This confirms the brand’s core identity as one rooted in **fantasy escapism, rather than realism or anatomical reference**, indeed these forms are often hyper-stylized, grotesque, or exaggerated—offering both roleplay immersion and a sense of otherworldly transgression.

7.2 7.2 Technology & Materials

These toys are typically made from **platinum-cured, medical-grade silicone**, ensuring both safety and durability.. While some brands signal inclusivity through non-gendered language, the primary audience overlaps with:

Despite the playful tone, these toys are often **engineered with precision**, incorporating suction cups, firmness levels, and even “ovipositors” (egg-laying dildos) for immersive roleplay.

7.3 7.3 From Object to Character

The product names themselves play a key role in brand identity:

Examples include:

- “Chance the Stallion”
- “David the Werewolf”
- “Nox the Night Drake”

Descriptions often blend:

- Erotic language (“thick ridges made for deep stretch”)
- Playful tones (“a worthy toy for those who dare”)
- Empowering messaging (“crafted for those who write their own stories”)
- The tone is explicitly inclusive, imaginative, and unapologetically deviant.

8.3 8.3 Cultural Meaning of Color

The table below summarizes the symbolic meanings and cultural associations of key colors used in erotic product design:

Color	Symbolism & Associations	Communities / Trends
Purple	“Sexiest” color; blend of pink & blue; symbolizes fantasy, queerness, royalty, and power	Widely adopted; queer-friendly; non-binary appeal
Pink	Traditional feminine, romantic, “cute”; also seen as infantilizing or stereotyped	Declining among LGBTQ+ and collectors
Black	Elegant, dominant, techy, “serious”; associated with kink, BDSM, and luxury	Popular in premium and fetish lines
Blue	Calm, soothing, wellness-oriented; gender-neutral or masculine-coded depending on context	Used in wellness & ergonomic brands
Gold / Metallic	Prestige, wealth, intensity, premium status	Found in luxury toys and designer collaborations
Neutral Pastels	Soft, gentle, inclusive; often tied to self-care and gender neutrality	Used by brands like Dame, Lelo, and Maude
Bad Dragon Colors	Galaxy swirls, neons, fantasy palettes; break realism entirely	Reinforces narrative and character identity

8.4 8.4 Comparison with Bad Dragon’s Color Palette

Unlike most brands, **Bad Dragon** adopts a vivid, fantasy-driven color system. Their designs include:

- Custom marbling (e.g., red/black, blue/silver)
- Galaxy swirls and neon gradients
- Naturalistic “monster” skin tones
- Optional paint detailing on request

These visual choices serve a narrative function: Bad Dragon toys aren't replicas of the human body, they're imaginative tools for world-building, roleplay, and deviant erotic expression.

As brands move beyond rigid gender coding, **color becomes not just a visual choice, but a declaration of values:** fluidity, empowerment, imagination, and erotic agency.

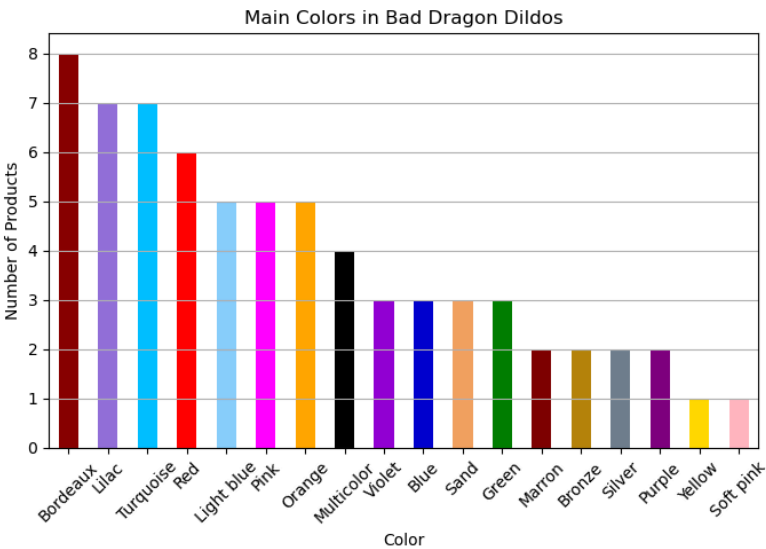


Figure 18: Main Colors in Bad Dragon Dildos

Figure 18 highlights Bad Dragon's dominant use of intense, non-naturalistic colors. Unlike mainstream brands that stick to soft pinks or purples, Bad Dragon's palette emphasizes boldness, fantasy, and visual play. These choices reflect the brand's commitment to escapism and user-defined erotic identity.

8.5 Conclusion: A Palette of Possibilities

The color of a sex toy is never just decorative. It encodes gender assumptions, cultural shifts, and branding strategies. While pink still dominates in legacy consumer data, the rise of purple as a non-binary, luxurious, and queer-associated color signals a deeper evolution in erotic design.

Meanwhile, brands like Bad Dragon actively subvert mainstream palettes with their vibrant, custom, and often multicolored creations, offering not only tools for pleasure but objects of fantasy, art, and identity exploration.

As color choices diversify, sex toys are shedding their clinical or heteronormative appearance and becoming instruments of self-expression, from soft neutrals to cosmic swirls. In choosing a color, the user is often choosing a story, one that reflects not only desire, but identity: the future of erotic design may very well be polychrome.

9 Erotic Cosmetics & Sensory Expansion

9.1 Westward Transition into Wellness Culture

Sensory creams and arousal serums are no longer niche curiosities. Once relegated to discreet adult shops or marketed with overtly sexualized imagery, these products are now found in pharmacies, herbalist stores, and wellness boutiques, sometimes even without explicit mention of their erotic purpose.

Originating in East Asia, the use of "orgasm creams", "hot & cold gels", and herbal aphrodisiacs is long-established. Many of these products leverage botanical ingredients and a tradition of sexual energy enhancement. Today, they are crossing over into Western markets and wellness discourses, often rebranded as tools for mindfulness, intimacy, and sensory connection.

Products often blend:

- Menthol, ginseng, capsaicin, L-arginine
- Natural oils and fragrance components (e.g. ylang-ylang, rose, ginger)
- Formulations that emphasize qi energy, circulation, and holistic arousal

These are sold alongside lubes or herbal tonics not always erotic, but part of a complete health philosophy.

9.2 Strategic Growth of the Sexual Cosmetics Market

In European and North American markets, these creams have found new ground thanks to:

- The rise of wellness marketing

- Retail expansion in pharmacies and e-commerce
- Focus on female pleasure and couple intimacy

Examples:

IT Meafarma, Comodo.it and L'Erboristeria now offer clitoral gels and orgasm boosters in categories like "hygiene & well-being".

These products often highlight natural ingredients, non-invasiveness, and even aromatherapeutic properties.

9.3 9.3 Comparative Positioning

Aspect	East Asia	Europe / West
Main Focus	Circulation, chi energy, warmth	Arousal, sensitivity, emotional intimacy
Framing	Herbal health, aphrodisiac tradition	Cosmetic + sensual wellness
Placement	Next to lubes or herbal products	Separate from lubes, often in "cosmesi"
Ingredients	Menthol, ginseng, herbal blends	Similar actives + marketing flair

9.4 9.4 Market Evolution and Strategy

According to a recent [market report \(https://www.globenewswire.com/news-release/2025/04/02/3053998/28124/en/Sexual-Wellness-Market-Forecast-to-Reach-62-74-Billion-by-2030-Emerging-Technologies-and-Personalized-Solutions-Set-New-Standards.html\)](https://www.globenewswire.com/news-release/2025/04/02/3053998/28124/en/Sexual-Wellness-Market-Forecast-to-Reach-62-74-Billion-by-2030-Emerging-Technologies-and-Personalized-Solutions-Set-New-Standards.html), the sexual wellness industry is being reshaped by:

- Informed consumers seeking personalized and health-conscious solutions
- Data-driven innovation: real-time trend tracking, segmentation
- Organic formulations gaining traction
- Omnichannel sales blending pharmacy, online, boutique, and wellness stores

Key brands like **Lovehoney**, **Tenga**, **CalExotics** and **Bijoux Indiscrets** are expanding their cosmetic-style product lines to meet this demand.

9.5 9.5 Commentary: Erotic Care in a Wellness World

What was once taboo is now part of the routine. Arousal creams no longer live only in the nightstand drawer, they're on beauty shelves, beside calming oils and moisturizers. This shift mirrors a broader trend: the normalization and personalization of sexual health, not as indulgence, but as essential self-care.

In this new landscape, the lines between beauty, wellness, and eroticism are not just blurred, they're being rewritten.

10 10 Industry & Innovation

10.1 10.1 Branding Evolution & Business Identity

In recent decades, the pleasure industry has undergone a profound transformation not just in terms of products and technology, but in the values and identities behind the brands themselves. Sex toys are no longer just tools for physical stimulation; they have become cultural artifacts, expressions of social change, and often, the personal missions of their founders.

Each company in this landscape emerges from specific needs (mainstream acceptance, feminist rebellion, fantasy exploration, trauma recovery) but evolves into something far more complex. What unites them is how strongly their **brand identities reflect the personal visions, values, and sometimes contradictions of their creators**.

Whether it's a desire to normalize female pleasure (Sh!, Lora DiCarlo), to challenged legal taboos around contraception and sexuality (Beate Uhse), to bring eroticism into the mainstream (Lovehoney), to celebrate taboo-breaking fantasy (Bad Dragon), or to build reliable, inclusive pleasure products with mass appeal (CalExotics), each company stands as a mirror to both consumer demand and personal philosophy.

In the following comparison, we explore **six key players** through their histories, audiences, innovations, and controversies, revealing how **personal ethos and market opportunity have coalesced into powerful, sometimes fragile, brands**, providing a side-by-side view that represents distinct directions in the evolution of the sex toy industry.

From legacy pioneers to high-tech disruptors, their trajectories reflect not only innovation but

Company	Founded	Brand Values	Iconic Products	Target Audience	Notable Controversies	Innovative Claims
Beate Uhse	1962 (Beate Uhse)	Freedom, sexual wellness, historical feminist legacy	Contraceptives, erotic media, later sex toys	Initially couples and women, now broad	Criticism by feminists for porn business	1st sex shop, over 2,000 lawsuits survived
Sh!	1992 (Kathryn Hoyle and Sophie Walters)	Feminist, trauma-informed, clitoral focus	Non-realistic clitoral and internal toys	Women, queer people, trauma survivors	None; praised for ethics	Clitoral-first design, Vaginismus Awareness Day
CalExotics	1994 (Susan Colvin)	Inclusivity, innovation, women-led	Osé, blended orgasm tech	All genders, all orientations	None major reported	1st to use feminine colors, 100% silicones, waterproof tech, warranties
Lovehoney	2002 (Richard Longhurst and Neal Slateford)	Sexual happiness, mainstream appeal	Sqweel, Fifty Shades line	Mass market, couples, pop culture fans	Minimal; mainstream integration	1st toy recycling scheme, oral sex simulators
Bad Dragon	2008	(Varka, Narse, Athus Nadorian and Raith)	Fantasy, custom design, subcultural appeal	Fantasy dildos (dragon, alien etc.)	Furries, fantasy fans, adventurous users	Niche taste, outsider perception
Lora DiCarlo	2017 (Lora Haddock)	Sex-positive tech, female empowerment (initially)	Osé, blended orgasm tech	Tech-savvy, feminist-leaning women	Harassment claims, lawsuits, financial collapse	CES award scandal, biomimetic robotics

10.2 10.2 Materials, Sustainability, Inclusivity

In contemporary sex toy manufacturing, **material selection and ethical engineering** have become key differentiators in a competitive and increasingly regulated market. The shift from porous, potentially hazardous materials to **medical-grade silicone, ABS plastic, and non-toxic elastomers** has elevated both consumer safety standards and product longevity.

CalExotics pioneered several innovations in this domain, introducing **100% premium silicone devices** and becoming one of the first manufacturers to standardize **waterproofing and product warranties**, elements now considered industry benchmarks. Similarly, **Bad Dragon's** artisanal production model relies on hand-poured silicone formulations with customizable firmness, color, and sizing. This model not only meets stringent quality requirements but also supports niche consumers with non-normative preferences and anatomical needs.

Sustainability efforts have emerged in tandem with material innovation. In 2007, **Lovehoney** launched the first formal **sex toy recycling program** (Rabbit Amnesty), addressing a critical gap in end-of-life product management. **CalExotics** followed with advancements including **solar-powered vibrators** and **wireless chargers with built-in UV sanitization**, integrating eco-conscious design with hygienic functionality.

On the axis of **inclusivity**, brand strategies have moved beyond gendered marketing to embrace broader notions of sexual identity, health status, and trauma recovery. **Sh!** has positioned itself explicitly within a trauma-informed and feminist framework, designing products that avoid anatomical mimicry and supporting initiatives such as **Vaginismus Awareness Day** and partnerships with **Macmillan Cancer Support**. **CalExotics** established the first **all-women product development team**, and **Bad Dragon**, while rooted in fantasy subcultures, enables expression for users across gender identities and kinks often marginalized by the mainstream market.

Together, these developments reflect a significant evolution: sex toys are no longer neutral objects, but **engineered instruments of inclusive, safe, and sustainable pleasure**.

10.2.1 10.2.1 Regulatory Considerations and CE Marking

In the European Union, sex toys fall under two regulatory regimes:

- **General consumer products**, governed by Directive 2001/95/EC, **do not require CE marking**. In fact, displaying the CE mark on these products is misleading.
- **Electrical or electronic products** (e.g., vibrators, app-connected devices) **must display the CE mark**, ensuring compliance with relevant EU directives (e.g., Low Voltage Directive, EMC Directive).

Despite their intimate use and mucosal contact, **non-electric sex toys lack sector-specific legislation**. In 2023, MEP Sara Cerdas requested EU-wide norms to address this gap, citing consumer safety concerns. The European Commission declined, stating:

“The Commission does not intend to propose sectoral legislation for sex toys in the near future.” Nevertheless, under the current framework, **all sex toys must meet general product safety standards**, with manufacturers expected to provide adequate **risk assessments, usage instructions, and hygiene guidelines**.

As a result, **compliance and consumer trust often depend on voluntary best practices** especially from premium brands that integrate safety, sustainability, and ethical transparency as core brand values.

The table below summarizes when CE marking is required for various categories of sex toys and related products under EU law, helping clarify safety and compliance obligations for manufacturers and retailers.

Product Type	CE Mark Required?	Based on EU Law		Notes
Electric/electronic sex toys	Yes	Low Voltage Directive / EMC Directive		Must comply with safety, electromagnetic compatibility, and sometimes RoHS (for electronics).
Battery-operated vibrators	Yes	As above		Includes toys with internal motors, USB charging, remote control.
App-connected sex tech	Yes	RED Directive (if wireless)		Data privacy may also be relevant (GDPR if collecting personal data).
Non-electric/manual toys	No	General Product Safety Directive 2001/95/EC		CE mark must not be shown. Products must still meet safety standards.
Lubricants and gels	Usually No	May fall under cosmetics or medical devices		Check classification carefully: some may require separate conformity steps.

Reminder: Even without CE requirements, **risk analysis, toxicity testing, and user information are essential for legal compliance and consumer trust.**

10.3 10.3 The Role of Data and Personalization

As the **sex tech industry shifts from static design to data-driven, app-connected experiences**, intimacy is increasingly shaped by algorithms and customization. Devices now learn from user behavior, store preferences, adapt stimulation in real time, or offer physical personalization, as seen with Bad Dragon’s customizable options. But innovation brings new vulnerabilities: from biometric data and usage logs to Bluetooth-enabled commands, the risk of breaches and unauthorized access is real. The 2016 We-Vibe case exposed just how little control users may have: detailed data was collected without consent, leading to a class-action lawsuit and a \$3.75 million settlement. Similarly, Lora DiCarlo’s high-tech promise collapsed in 2022, leaving behind not only unpaid debts but also unanswered questions about the fate of user data. Despite the theoretical protection offered by GDPR, there is no sector-specific regulation in the EU. The European Commission has so far declined to address this legal gap, even as sex toys increasingly collect sensitive, biometric information. As personalization deepens and the line between intimacy and surveillance blurs, cybersecurity, transparency, and consent are no longer optional, they are central to product safety, ethical design, and brand

10.4 10.4 Companies and Product Portfolios

The previous table provided a comparative overview of six prominent companies in the sex toy industry. To further illustrate their distinct identities, the following visual gallery highlights each brand’s approach to product design, packaging, and marketing.



Beate Uhse, Hamburg, nowadays
A traditional brand showcase. Much has been achieved.



Sh!, Silicone Dildos Handmade by Women
"They are not penises."



Calexotics, Bestseller number 1
"Own your pleasure."



Lovehoney
Bold purple branding, tech appeal, and playful



Bad Dragon: Meet Ika® the Tentacle
An award-winning fantasy-themed dildo.



Lora DiCarlo's technology and design

Across all case studies and technological shifts explored in this chapter, one message is clear: **sex toys** are no longer marginal or purely functional items. They are **political**, **aesthetic**, and **technological artefacts** shaped by regulatory gaps, social debates, and the aspirations of both users and makers.

From feminist led ethics to gamified fantasy, from silicone sustainability to algorithmic personalization, the sex toy industry now moves in multiple, sometimes contradictory directions. The convergence of values and capital, of empowerment and risk, of inclusion and surveillance, defines the innovative, fragile, and fascinating nature of this evolving field.

11 11 From Tools to Symbols : A Data-Driven Perspective

Chapter 8 explored how brands shape the sex toy landscape. Now, in Chapter 9, we turn the lens around to look not just at companies, but at people.

What do sales data reveal about real desires? What do usage patterns tell us about agency, aging, relationships, and freedom?

Here, sex toys become more than just products, they become symbols of autonomy, compatibility, and change.

Sex is about enjoyment, not just “the hole or the pole,” but the human being behind it. Sales data from three major companies (Sh! - UK, Beate Uhse - Germany, and CalExotics - USA) suggest that sexual satisfaction and toy usage are driven less by mimicry of bodies and more by exploration of sensation, anatomy, and agency.

This shift in demand reflects a deeper consumer trend: people aren't buying replicas, they're buying tools for self-discovery and relationship enrichment. These symbolic choices have pricing consequences too. The most appreciated toys, across all categories, often fall into higher price tiers, indicating a **growing link between emotional resonance, brand storytelling, and perceived product value**.

Indeed, across all sexual orientations, women consistently buy more **penetrative sex toys** than non-penetrative ones.

It's clear from both qualitative studies and consumer behavior that dildos and vibrators are not about replicating a man's penis, they're about recreating the **sensation of penetration**.

Lesbians, for example, aren't attracted to men, but may enjoy penetration: they share the same anatomy as heterosexual women, and their preferences reflect that. What this teaches brands is critical:

design isn't about gender: it's about function, sensation, and agency.

11.1 11.1 Women's Sexuality Evolves with Age

Multiple studies confirm that **women's sexual needs, curiosity, and confidence tend to increase with age**, not decline.

- Younger women may buy toys out of curiosity or experimentation.
- Women in their 30s–40s often seek quality, compatibility with partners, and better self-knowledge.
- Women 50+ increasingly value control over pleasure, independence, and intimacy on their own terms.

Sexual agency matures and toy choices mature with it.

This offers businesses a powerful insight: the idea that sex toys are “for young women” is not only outdated: it's a missed market opportunity.

11.2 11.2 Not Just Solo: Couple Satisfaction

Toys are not just tools for solo pleasure, they're bridges in relationships.

Numerous studies have shown that **couples who use toys together** report higher satisfaction levels, improved communication, and better sexual compatibility.

This is especially true with toys that enable shared control, playful dynamics, or remote intimacy. **CalExotics**, notably, positions many of its products for couple use with app control, dual stimulation, and wearable tech. Their catalog reflects a strategic move toward shared pleasure as a cultural and commercial value.

For brands, this signals a growth area:

products designed to enhance intimacy, not just individual release, are gaining traction and loyalty.

11.3 11.3 What This Data Tells Us

“Sexual pleasure comes in different shapes, forms, and colors. **Our fantasies aren’t bound by gender or labels, but shaped by experience, freedom, and choice.**”

- Penetration is not about the penis.
- Toys are not about gender roles, they’re about physical feedback and personal autonomy.
- The idea that “penetration = submission” is reductive.

For many, the power lies in **giving consent**, in **trusting your own reactions**, in exploring pleasure without judgment.

For business leaders and designers, the takeaway is clear: **users reward brands that embrace diversity, agency, and emotional intelligence**. Success lies not in reproducing anatomical clichés, but in understanding the lived experience of desire from the beginner’s curiosity to the seasoned user’s self-assurance.

Ultimately, the shift from tool to symbol tells a bigger story, one where **sex is not a performance, but a process**. Not a role to play, but **a right to claim**.

As the industry evolves, one trend remains constant: the more diverse our tools become, the more diverse, and liberated, our stories of pleasure can be.

What we learn from sex toys is not just how people experience pleasure, but how they reclaim it.

In the stories behind these objects, their use, their rejection, their reinvention, we find echoes of trauma, healing, identity formation, and social permission.

Pleasure becomes not just an act, but a language: to communicate with oneself, with others, or with the unspoken histories of shame and silence.

From entry-level bullet vibes to award-winning blended-orgasm tech, sex toys are no longer neutral.

They are coded with meanings of freedom, queerness, care, imagination, and rebellion.

Even failure matters: Lora DiCarlo’s collapse wasn’t just a startup downfall. It was a moment where ambition, tech, feminism, and unresolved power dynamics clashed.

And that too is part of the story.

Today, sex toys live in algorithms, in lawsuits, in memory foam and fantasy worlds. They are sold in supermarkets and crowdfunded online.

They educate, stimulate, provoke, and evolve.

Ultimately, this project shows us not only what we touch, but what touches us in return.

A sex toy is a tool.

But also a symptom.

A question.

12 12. Limitations and Future Research Directions.

12.1 12.1 Scope and Generalizability

While this analysis offers a compelling contrast between bestselling and most loved sex toys, it draws from a limited number of platforms, few, but significant. As such, several limitations apply:

- **Lack of demographic data:** Age, gender, and sexual orientation of customers remain unknown.
- **No real-time sales metrics:** Product popularity is inferred from site categorizations (e.g., “Bestseller”), not transparent sales figures.
- **Geographic focus:** The German site of Beate Uhse, the US-based CalExotics, and the UK’s Sh! provide valuable contrast, but may not reflect global or multilingual markets.

Despite these constraints, the current data paints a valuable picture of how consumer behavior, product design, and cultural attitudes intersect in the sex toy industry and points to meaningful patterns worth deeper exploration.

12.2 12.2 Suggestions for Further Study

Future research could expand this analysis in several directions, enriching both academic and commercial perspectives:

12.2.1 Aging and Sexuality

As global life expectancy rises, older adults represent a growing yet underserved segment of the sex toy market. Future research should explore how design, communication, and distribution can better meet their needs — particularly given the overlap with mobility, dexterity, and sensory challenges. Visibility, accessibility, and education remain key gaps.

12.2.2 Inclusive Design & Representation

According to the World Health Organization, nearly **37.5% of the world’s population** lives with a disability. The sex toy industry is still in the early stages of addressing this reality.



"Promotional image from Lovehoney's inclusive campaign spotlighting sexual confidence and connection beyond ableist norms."

Further work could examine:

- Toys adapted for limited dexterity or mobility
- Inclusive advertising across ability, gender identity, and body size
- Narratives from users with disabilities and their lived experiences
- **Emerging technologies:** Investigate the growing market of **audio-responsive toys**, **AI-powered devices**, and **VR-integrated experiences**. These products are redefining intimacy and may reshape consumer expectations in profound ways.
- **Cultural representation:** Explore how branding, language, and design aesthetics vary across global markets, especially in non-Western regions, LGBTQ+ communities, neurodivergent audiences and how erotic tools are positioned in relation to local taboos, religions, or social codes
- **User-generated data:** Incorporate product reviews, forum discussions, or anonymized usage patterns to better understand emotional attachment, satisfaction, and unmet needs.
- **Sustainability:** Analyze how ecological concerns (from rechargeable batteries to recyclable packaging) are influencing both design choices and consumer loyalty. This could become a new form of brand differentiation.
- **Retail vs. direct-to-consumer trends:**

Compare legacy retailers to indie or DTC brands to evaluate who sets the trends and who follows them.

- Who drives innovation vs. who replicates it
- How authenticity and niche identity compete with broad-market reach
- What role e-commerce plays in reshaping stigma, access, and choice

Taken together, these paths suggest that the study of sex tech, when blended with cultural theory, product design, market analysis, and human psychology, has only just begun.

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