

FEASIBILITY REPORT

Which New Online Program Should Vanderbilt Launch Next

A Data-Driven Program Viability Assessment

Prepared for the Office of the Deputy Provost,
Office of Professional Education, and Office of Learning Innovation

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Table of Contents

I. Executive Summary

II. Recommendation

III. Overview

IV. Methodology

V. Where the Jobs Are

VI. Where the Students Are

VII. Where the Gaps Are

VIII. How the Composite Score Works

IX. The Five Finalists

X. What We Ruled Out

XI. Two Open Questions Before Launch

XII. Next Steps

XIII. Limitations

XIV. Appendix

XV. Glossary

I. Executive Summary

Five fields clear every check this assessment applies: employers are hiring for them, students are enrolling in them nationally, and Vanderbilt doesn't already teach them online. Data Science, Applied Informatics, Quantitative Economics, Business Analytics, and Information Science are strong enough on this analysis to justify serious next-step investigation, starting with Data Science, the strongest of the five.

One field, Management Science, scored higher than all five on paper but was set aside: its labor-demand number is inflated by a single job category broad enough to inflate several unrelated fields the same way. The full reasoning is in the judgment calls section.

This assessment establishes which fields are worth pursuing further and why, and recommends deeper research into all five as the immediate next step. Pricing, curriculum design, and go-to-market decisions come after, and aren't covered here.

II. Recommendation

Move all five finalists into a formal program-development review this cycle, in the order the scores support: Data Science first, followed by Applied Informatics, Quantitative Economics, Business Analytics, and Information Science. Each has already cleared every check this assessment applies — employer demand, student demand, and a clear gap in Vanderbilt's current catalog.

From here, the open work is operational: two naming decisions, five school placements, and a competitive scan this analysis doesn't yet cover, all laid out in Next Steps.

III. Overview

Vanderbilt's online and professional program portfolio has grown quickly over the past several years, almost entirely in three areas: education, through Peabody College; computing and artificial intelligence, through the College of Connected Computing; and nursing. Outside those three areas, the online catalog is thin (15 degree programs today, 11 master's and 4 doctoral, plus 12 standalone certificates).

This assessment sets out to answer three questions:

- Which fields outside Vanderbilt's current online footprint show real, measurable national demand?
- Do employers show sustained hiring demand for graduates in that field?
- Are enough students nationally already completing degrees in that field to suggest a real audience?

The approach starts directly from national labor and enrollment data: Bureau of Labor Statistics job projections and Department of Education completions counts. Every field considered is measured against the same national data, with the same criteria.

IV. Methodology

Two public data sources drive this analysis. Bureau of Labor Statistics job projections through 2034 supply the labor-demand side. National degree-completion counts from the Department of Education's IPEDS system, covering 2012 through 2024, supply the student-demand side. A National Center for Education Statistics crosswalk connects the two, since job categories and fields of study are tracked under different code systems.

After matching the two datasets and removing everything Vanderbilt already teaches online, 1,268 candidate fields remained. Each one was scored on five weighted factors pulling from both data sources, and sorted into a Go, Test, or Pass band based on that score. The full breakdown of the scoring and banding method is in Section VIII, once the demand and gap findings below establish why it matters.

V. Where the Jobs Are

Employers are already hiring for these fields, and the growth is concentrated rather than broad. Data scientists are projected to grow 33.5 percent between 2024 and 2034. Information security analysts and medical and health services managers show up on the same federal list of fastest-growing occupations. Figure 1 breaks out the specific occupations behind each finalist's labor-demand score.

Projected occupation growth, 2024–2034, by finalist

The three occupations shown for each field are the ones its labor-demand score is actually built from.

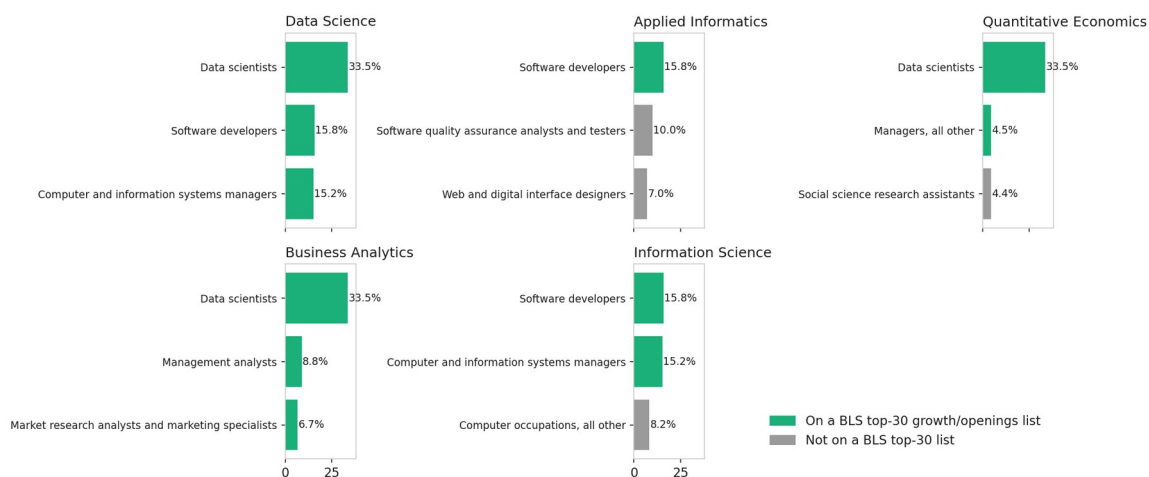
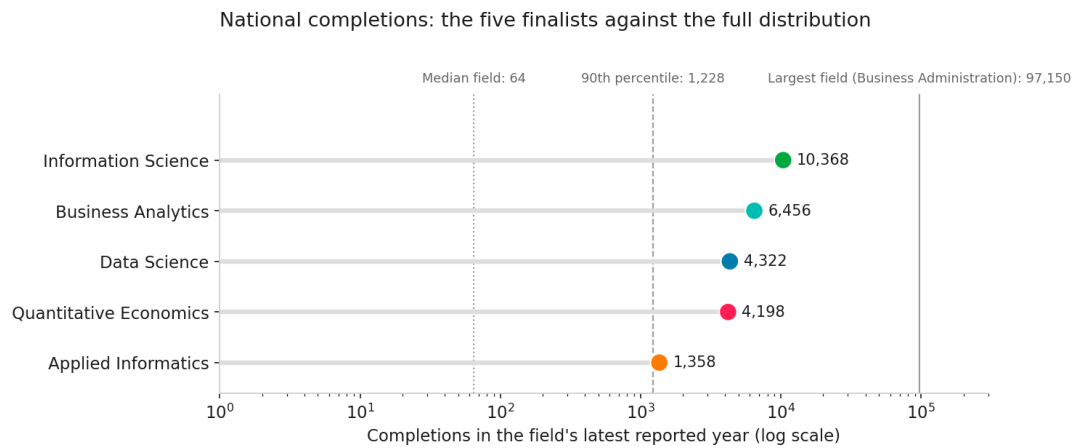


Figure 1. The three occupations behind each finalist's labor-demand score, with projected growth through 2034. Occupations shaded green also appear on the Bureau of Labor Statistics' own published lists of the fastest-growing or highest-volume jobs in the country.

VI. Where the Students Are

A handful of catch-all fields dominate national enrollment data. General Business Administration alone accounts for close to 100,000 completions a year, roughly 1,500 times the typical field. Left alone, a few fields that size would swamp any ranking based on raw counts and make every other field look small by comparison.

To keep that from happening, every field was converted to a percentile rank on each metric instead of being ranked on the raw number. A percentile rank asks what share of all 1,268 fields a given field outscored: a field at the 90th percentile beat 90 out of every 100 fields evaluated, whether the raw count behind it was 500 completions or 50,000. On completions alone, Data Science sits at the 96th percentile, ahead of all but about 4 percent of the fields evaluated. That's why it ranks near the top of this assessment without needing to be measured against outlier-sized fields like Business Administration to look strong.



All five rank far above the median field. The reference lines show why raw counts alone would be misleading: one field alone is close to 100,000 completions.

Figure 2. National completions for the five finalists against reference points from the full distribution of 1,268 fields. All five sit far above the median field.

This same ranking method caught a data quirk worth knowing about. Two of the five finalists, Data Science and Business Analytics, only have five years of completions history instead of thirteen. Both fields were only added to the federal classification system in 2020, so five years is all the government has ever recorded for them.

VII. Where the Gaps Are

Vanderbilt's 15 online degree programs cluster into three schools. Peabody College runs six, all in education. The College of Connected Computing runs two, both in computing. The School of Nursing runs three. The remaining four are spread one each across the School of Medicine, the Law School, the School of Engineering, and the Divinity School. All five finalists sit outside every one of those areas, and none of the five duplicates a program Vanderbilt already teaches online.

VIII. How the Composite Score Works

Each field's final score blends five factors. Every factor is converted to a percentile rank first, the same way completions were in the previous section, so that unlike scales — completions counts, job-opening numbers, growth percentages — can be combined on one common 0–100 basis.

How the composite score is built: five weighted factors

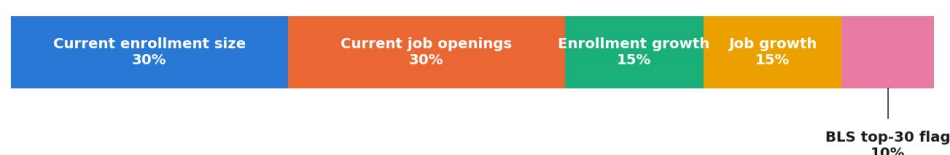


Figure 3. The five weighted factors behind every composite score in this assessment.

Current enrollment size and current job openings each count for 30 percent of the score. They answer the most basic question on each side: is there already a real market of students, and a real market of employers. Enrollment growth and job growth each count for 15 percent, weighted lighter on purpose, since a small starting base can produce a large percentage swing that looks more dramatic than it actually is. The remaining 10 percent is a flag for whether a field's occupations appear on the government's own published lists of fastest-growing or highest-volume jobs, treated as a corroborating signal rather than a primary driver.

For about 85 percent of the 1,268 fields evaluated, all five factors had real data behind them. When one was missing, the remaining factors were rescaled to still add up to 100 percent, so a gap in a single government dataset doesn't quietly zero out a field's chances.

Every field's score also places it into one of three bands. Go means the top decile, a score of 75.3 or above: 126 fields, strong enough on every available signal to justify real due diligence now, and where all five finalists land. Test means above the median but below the Go cutoff, 45.7 to 75.2: 502 fields that show real signal on some factors but not enough to justify immediate investment, worth a second look if circumstances change. Pass means below the median, under 45.7: the remaining 626 fields, where nothing here suggests near-term action.

The Go band's 126 fields aren't 126 distinct programs. Many are near-duplicate ideas coded under different federal program codes, the same way a nursing specialty can be split across several codes when a source catalog records each specialty as its own row. Fields sharing at least three significant words in their title, or the same four-digit program-code prefix, were linked into a single cluster and ranked by that cluster's single strongest member rather than an average, since the real question is which one program to launch, not how a group of related credentials performs together. That reduced the 126 raw fields to 61 distinct real-world options: 27 clusters of 2 to 13 related codes, plus 34 fields with no close match. Figure 4 and the finalists table below both draw from this deduplicated list of 61, not the raw 126.

IX. The Five Finalists

Field	Proposed Program Name	Score (0–100)
Data Science	Master of Science in Data Science	93.9
Informatics	Master of Science in Applied Informatics	92.3
Econometrics and Quantitative Economics	Master of Science in Quantitative Economics	92.0
Business Analytics	Master of Science in Business Analytics	91.6
Information Science	Master of Science in Information Science	90.3

Composite score: the strongest new candidates vs. Vanderbilt's current online catalog

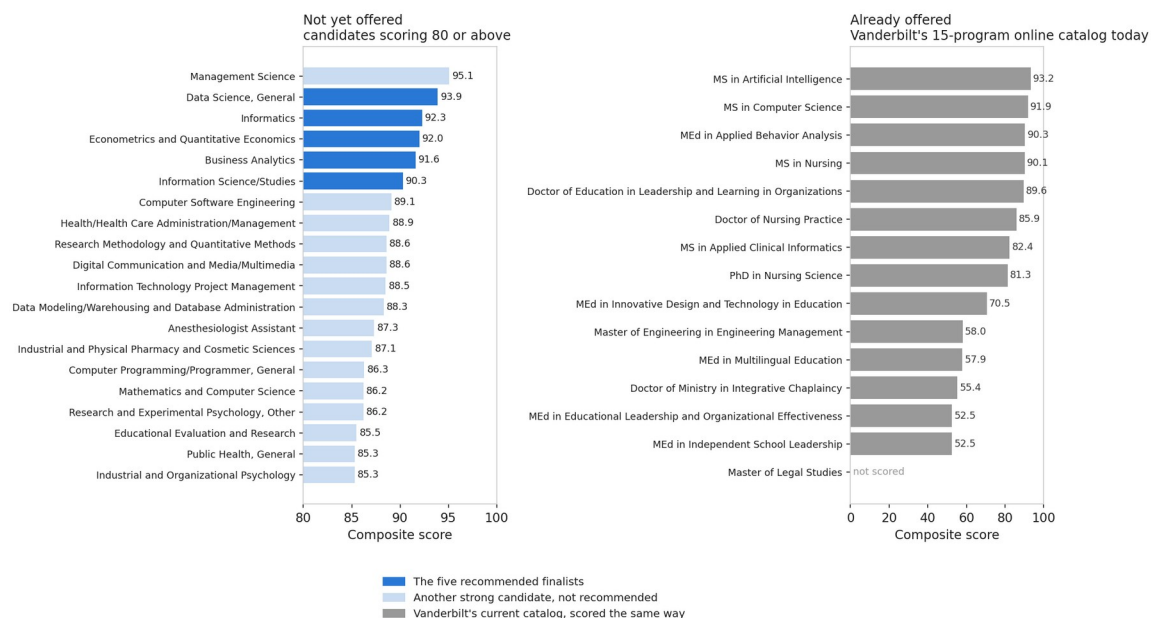


Figure 4. Left: the strongest of the 61 distinct candidates not already in Vanderbilt's catalog, all scoring 80 or above, with the five finalists highlighted in blue. Right: Vanderbilt's own 15-program online catalog, scored on the identical scale, as a baseline for comparison. Master of Legal Studies is coded at the CIP family level in Vanderbilt's official program mapping rather than a specific six-digit code, so it can't be matched to a single scored row in this analysis and is shown as not scored.

Vanderbilt's two AI and computer science programs, both already online, score higher than every finalist except Data Science. That's a useful sanity check on the method: the same scoring approach that ranks the five finalists also puts Vanderbilt's own strongest existing programs near the top of the catalog, rather than turning up noise.

X. What We Ruled Out

Management Science scored highest of all 1,268 fields evaluated, ahead of every finalist including Data Science. Its job-openings number is inflated by one broad occupation, "General and Operations Managers," which also inflates seven other unrelated fields the same way. That occupation is common enough across job categories that it isn't a reliable signal for any one field in particular, so Management Science was set aside because its top-line number doesn't reflect real demand for that specific degree.

XI. Two Open Questions Before Launch

Two of the five finalists run into a naming overlap with an existing Vanderbilt program. Neither overlap disqualifies the program, but each needs a decision before a name goes public.

Data Science: Vanderbilt's Data Science Institute already runs an on-campus Master's degree under this exact name. It's an in-person program only, and Vanderbilt has done this before: Computer Science runs online and on-campus under the identical name, with separate admissions for each. That's a direct precedent for this exact setup.

Quantitative Economics: this one is a closer call. Arts and Science's existing Master's in Economics is filed under the exact same federal program code. Both programs are in-person only, and “Quantitative” is the word the government's own classification uses to tell the two apart. Because it's an exact code match, this needs a direct sign-off from the relevant department before the name goes public.

XII. Next Steps

The path forward centers on the five finalists themselves, not on rebuilding this analysis.

Resolve the two naming questions. Both open questions above need a decision before either program name is used publicly.

Map each finalist to a school. For each of the five, identify the Vanderbilt school that would house it and check where faculty or coursework could be shared with an existing program, since none of the five has been evaluated for curriculum feasibility yet.

Research the competition. Price, format, and enrollment at peer institutions offering the same or adjacent programs, none of which this analysis covers.

XIII. Limitations

Every signal in this analysis comes from public, secondary data: labor projections and completions counts, not surveys, interviews, or direct input from admissions or academic staff. The findings are specific to Vanderbilt's own catalog and wouldn't transfer directly to another university's gap analysis.

Labor demand reaches each field only through a many-to-many crosswalk between occupations and fields of study: a field links to about three occupations on average, but as many as 180 in extreme cases, so it's an employment-weighted blend of related jobs rather than an exact program-to-job count.

Wage isn't part of the score. Median pay is only available for 60 of the 832 occupations in the labor data, too sparse to use as a weighted factor, so salary potential isn't reflected in these rankings.

The same broad occupation code that ruled out Management Science, “General and Operations Managers,” shows up in 8 of the 126 highest-scoring fields overall, though not among the five finalists' own top occupations. It's a known gap in the underlying labor data, worth checking again if new fields enter consideration.

The exclusion of everything Vanderbilt already teaches online only catches an exact program-code match. Two of the five finalists exist under a different, related code at Vanderbilt already, covered in the naming questions above; a broader check for near-matches like these hasn't been done beyond those two.

XIV. Appendix

This is an independent portfolio project modeled on a real Vanderbilt University Office of the Deputy Provost job posting. It was not commissioned by, conducted for, or reviewed by Vanderbilt University, and it doesn't represent an official Vanderbilt position or work product.

An interactive dashboard covering all five finalists is available on Tableau Public. A separate, more technical write-up covering the full methodology, every data decision, and the reasoning behind it is planned as a companion piece on GitHub.

Data sources:

- Bureau of Labor Statistics, Employment Projections program, 2024–2034 (bls.gov/emp)
- U.S. Department of Education, IPEDS completions data, 2012–2024, accessed via the datausa.io API
- National Center for Education Statistics, official CIP–SOC crosswalk connecting fields of study to occupations (nces.ed.gov/ipeds/cipcode)
- Vanderbilt University's own online program catalog (vanderbilt.edu/online-learning)

All figures in this report were generated from the project's own scored and derived data tables, using the code in `notebooks/phase5_report_figures.ipynb`, included alongside this report.

XV. Glossary

Term	What it means
CIP	The federal Classification of Instructional Programs code, used to track what subject a completed degree was in.
SOC	The federal Standard Occupational Classification code, used to track what job an occupation is.
CIP–SOC Crosswalk	The official government table connecting the two code systems above, since fields of study and job categories are tracked separately.
IPEDS	The Department of Education's Integrated Postsecondary Education Data System, the source of the national student-completions data used here.
Percentile rank	A field's standing relative to every other field evaluated. A field at the 90th percentile scored higher than 90 out of every 100 fields.
Composite score	The single 0–100 number blending all five weighted factors described in Section VIII.
Go / Test / Pass	The three bands this analysis sorts every field into, based on where its composite score falls. See Section VIII for the cutoffs and what each means.
Cluster	A group of near-duplicate program ideas, coded under different federal program codes but representing the same real degree, treated as one option for ranking.