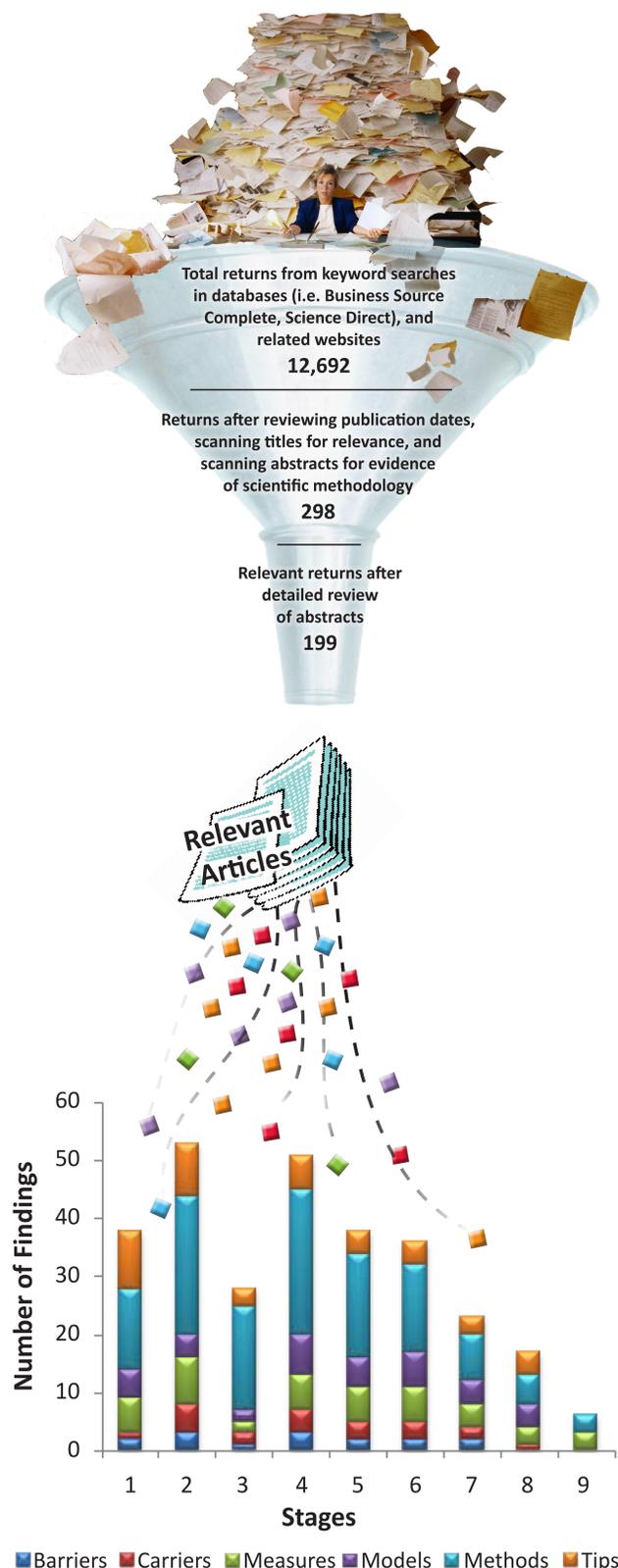## MOTIVATION:

- Many high-quality technological discoveries from applied research do not make it to the marketplace.

  - Researchers may not know how to move their discoveries out of the lab.

  - Researchers may not understand how their role fits into the larger context of the new product development (NPD) process.

  - Lack of communication between stakeholders results in the generation of unwanted, unneeded, or impractical discoveries.

- Manufacturers are interested in new NPD practices; however do not have the time to sift through thousands of resources.

RESEARCH OBJECTIVES:

- To create a user friendly and action oriented model (*Need to Knowledge Model*) detailing the steps involved in the New Product Development Process by:

  - Creating a stage/gate-style model linking the activities involved in generating research discoveries, prototype inventions, and product innovations.

  - Defining an opportunity to integrate a formal research process into new product development activities.

  - Integrating Knowledge to Action (KTA) concepts at key stages within the NPD process to facilitate communication between stakeholder groups.

- Identify, read, and classify current literature, which highlights issues relating to the steps within the *Need to Knowledge Model*.

- Extract important and actionable information (findings) from literature that substantiates the *Need to Knowledge Model*.

- Create a searchable database to house findings extracted from literature.

- Produce summaries of information and listings of tools that expedite the acquisition of new knowledge for busy professionals.

- Review and identify steps that are lacking substantiated findings.

Scoping Review Process

Total returns from keyword searches in databases (i.e. Business Source Complete, Science Direct), and related websites
12,692

Returns after reviewing publication dates, scanning titles for relevance, and scanning abstracts for evidence of scientific methodology
298

Relevant returns after detailed review of abstracts
199

Figure: Number of Findings by Stages (bar chart, Stages 1–9)

Legend: Barriers, Carriers, Measures, Models, Methods, Tips

PREDICTIONS:

- Practice Implications:

  - Researchers will be able to better understand where and how their work fits into the NPD process.

  - Communication and utilization of research will improve as practitioners implement KTA concepts in their work.

  - Manufacturers will gain a better appreciation of the value researchers can bring to the product development process.

  - Product development professionals will save time and money when making improvements to their NPD processes.

- Policy Implications:

  - Agencies granting funding for applied research activities can use the *Need to Knowledge Model* as benchmarking tool to ensure that they are funding viable development projects.

RESULTS:

- Number of Relevant Articles: 199

- Total number of findings: 788

	Primary Findings 547 Total	Secondary Findings 241 Total
Barriers	31	15
Carriers	37	25
Measures	47	8
Models	88	52
Methods	203	63
Tips	141	78

FUTURE WORK:

- Complete secondary analysis of findings for each stage and step

- Identify gaps

- Report findings

- Improve usability of knowledge base

- Initiate a second scoping review to gather information pertaining to gaps

- To add new research